

Three Essays in Hospitality and Tourism Communication

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ABSTRACT

Communication is a critical component of firm success. Modern day companies, including those from the domain of hospitality and tourism, go to great lengths to gain a competitive advantage through effective communication. It is not only communication within the organization that is important. Instead, effective corporate communication entails effective messaging and information flow across all stakeholders. This dissertation investigates three distinct types of communication that are very relevant to hospitality and tourism firms - online reviews, marketing promotions and product placements.

Chapter 1 provides a brief overview of corporate communication and outlines the central objectives of the research conducted as part of the dissertation. Chapter 2 uses an approach from behavioral economics to detect certain biases that afflict online reviews. Specifically, the paper uncovers the extent to which the seminal prospect theory principles of loss aversion and diminishing sensitivity afflict the sentiment expressed in online reviews.

Chapter 3 of the dissertation explores the effect of marketing promotions by hotels. Promotions are frequently deployed by hospitality industry managers in an attempt to augment revenues during times when excess capacity may be anticipated. While prior research indeed finds beneficial impacts of these promotions, the present study shows that

when finance-based are used to measure performance, promotions may in fact be detrimental. Relevant implications, especially for compensation design are outlined.

Chapter 4 uses the event study methodology to quantify the effect of product placements by hospitality firms in film and television. This form of advertising has become increasingly common today, but not much is known about the extent to which placements help firm performance. The findings show that placements provide a significant performance boost, although variables like genre and parental advisory rating are found to influence this effect.

The closing chapter, chapter 5, outlines the primary contributions of the dissertation, highlights the most important implications that follow from the research, while also acknowledging certain limitations that must be kept in mind when drawing any conclusions from this work.

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Chapter 1: Introduction

The term ‘corporate communication’ describes the range of techniques, systems and methods used by organizations to respond and adapt to their surroundings (Cornelissen, 2008). In an increasingly interconnected world, the importance of organizations effectively managing their communication has only intensified. This is certainly true for firms in the hospitality and tourism domain. This is because these firms operate in environments that entail a multitude of stakeholders with whom they must optimally interact to be successful. These stakeholders involve parties that are both internal as well as external to the firm and, at the granular level, include accommodations providers, transport providers, employees, consumers, destination marketing organizations (DMOs), governmental agencies, tour operators, offline and online travel agencies, investors, etc.

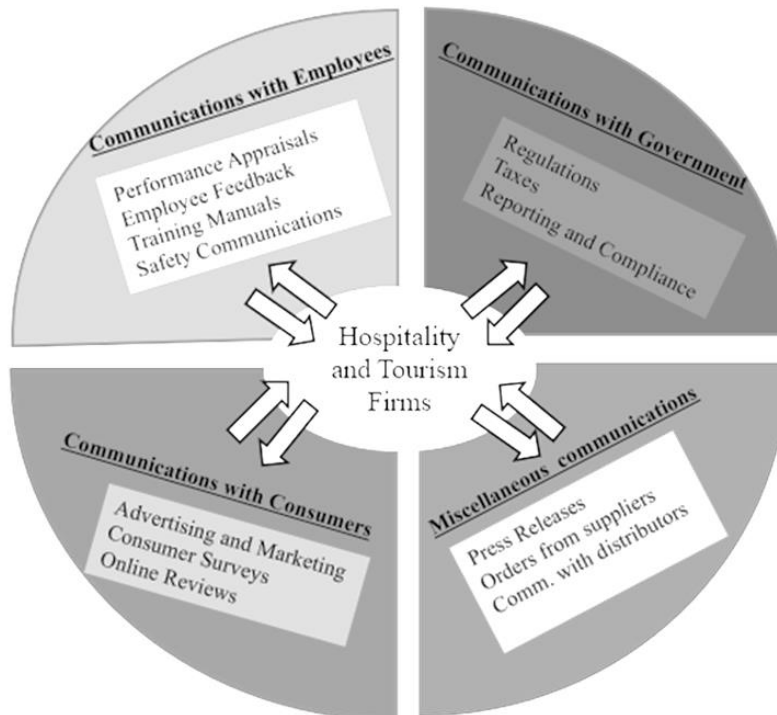


Figure 1.1: Corporate Communications

Figure 1.1 describes some of the communications that a hospitality or tourism firm must undertake with these various stakeholders. For illustrative purposes, the communications described herein are reduced to four types based on the party with whom communications are undertaken - communications with employees, communications with the government, communications with consumers, and miscellaneous communications. Note the examples of communication within each of these categories. In communicating with its employees, for instance, an organization may use tools such as performance appraisals, employee feedback, training materials, etc. In comparison, taxes filings, compliance and regulatory reports exemplify an organization's communications with the government.

Communications from consumers



- ▶ Chapter 2 : Does the underlying consumer sentiment found in online reviews characterized by loss aversion and diminishing sensitivity ?

Communications to consumers



- ▶ Chapter 3 : Are hotel promotions to consumers effective ?
- ▶ Chapter 4 : Are film placements an effective form of advertising for hospitality firms?

Figure 2.2: Dissertation Overview

This dissertation is concerned with examining how organizations in the realm of hospitality and tourism communicate with consumers specifically. In Figure 1.1., this constitutes the lower left quadrant. Three independent but interconnected research papers have resulted from the

research undertaken, each concerned with a distinct type of organization-consumer interaction. The first study (chapter 2) examines online reviews – a largely one-way form of communication the direction of which is usually either from consumers to firms or between consumers.

On the other hand, the other two research studies in this dissertation (chapter 3 and 4) examine communications that, in general, originate at firms and flow towards consumers – marketing promotions and product placements. Both these are communication devices used by firms to message consumers with the goal of enhancing firm performance. The main research questions that constitute this dissertation as addressed in the three studies as follows:

The first study (chapter 2) analyzes the relationship between ratings and review sentiment by introducing, for the first time in this strand of the literature, the tenets of Kahneman and Tversky's (1980) prospect theory. Specifically, the study tests loss aversion and diminishing sensitivity on a sample of over 130,000 online reviews obtained from TripAdvisor. Its finding that negative deviations in ratings (receiving a service with worse performance than expected) bring about a higher impact on review sentiment than positive deviations of equal magnitude (receiving a service with better performance than expected), confirms the presence of loss aversion in online review. Its other main finding - that regardless of whether the service received is better or worse than expected, variations in ratings closer to the reference point result in higher marginal impacts on sentiment than equivalent variations further away from the reference point, confirms the presence of diminishing sensitivity.

The second study of the dissertation focuses instead on a communication form the direction of which is, like most marketing strategies, is from organizations to consumers. Specifically, this study examines the effect of promotional activities by hotels on the finance-based metric that is market value – a long term measure of firm performance. The goal of examining long-term effects

is motivated by the fact that most of the extant research on the subject has looked primarily at short-run performance measures when evaluating the success of promotions (for instance, Dotson and Clark, 2004; Christou, 2011; Yang et al., 2016). Indeed, hospitality managers the compensation of whom is mostly based on performance on short-term accounting measures, are only eager to quickly roll out new promotions in an effort to increase metrics like occupancy rate. Looking at short-term effects is important, of course. It might even be tempting make conclusions regarding the effectiveness of promotions based simply on the positive effects resulting in the short term. After all, for most managerial decisions to be deemed effective, it need not be necessary positive effects to persist. This type of thinking, however, is premature for it assumes that even if benefits of promotions fade, that there are no negative consequences in the longer term. There is, of course, an obvious flaw in this kind of thinking. If negative effects are detected in the long run – effects that offset any positive effects that arise in the short run, the utility of promotions would indeed be subject to question. As such, before promotions to be rolled out, the long-term effects must also be considered. The second study of the dissertation fills this void in the hospitality literature by assessing the long-run effects of hotel promotions. Using a market valuation technique, the findings suggest that promotions indeed erode market value of firms by lowering consumer reference prices.

The third study of this dissertation (chapter 4) seeks to understand the performance related effects of brand integration, a type of communication that has evolved considerably since it was first used nearly a century ago (Rothenberg, 1991). Broadly, brand integration describes the advertising strategy which entails the inclusion of branded content into audio and visual mass communication (Balasubramanian 1994). Over the years placements have grown to encompass a variety of mediums – movies, television shows, novels, theater productions, songs, etc. Much of

the prior research on the subject has focused on placement effectiveness in terms of behavioral constructs. Less is known about how placements impact financial performance. Using the event study methodology and following the recommendations as outlined in MacKinlay (1997) and McWilliams and Siegel (1997), the research shows that placements have the potential to provide a substantial boost to hospitality firms.

Chapter 2: Testing Loss Aversion and Diminishing Sensitivity in Review Sentiment

Abstract

This article analyzes the relationship between ratings and review sentiment by introducing, for the first time, the tenets of prospect theory. Specifically, we test loss aversion and diminishing sensitivity on a sample of 132,486 reviews and find that: first, negative deviations in ratings (receiving a service with worse performance than expected) bring about a higher impact on review sentiment than positive deviations of equal magnitude (receiving a service with better performance than expected), thus, confirming loss aversion; and second, regardless of whether the service received is better or worse than expected, variations in ratings closer to the reference point result in higher marginal impacts on sentiment than equivalent variations further away from the reference point, thus, proving diminishing sensitivity. These results have relevant theoretical implications related to the use of relative vs. absolute measures and the cognitive bias involved, and managerial implications linked to meeting expectations and service recovery.

Keywords: prospect theory; loss aversion; diminishing sensitivity; review sentiment; rating.

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2.1. Introduction

While individuals might traditionally have relied on advertisers, friends and family to learn about products and services, the advent of the Internet has unquestionably transformed the ways in which consumers seek information and communicate consumption experiences. The proliferation of user-generated content fueled by the diffusion of Web 2.0 technologies has facilitated more widespread information sharing among consumers at all stages in the consumption process- before, during and after. Although such information sharing also takes place across multiple other electronic platforms such as Facebook and Twitter, online consumer reviews are undoubtedly one of the principal tools that individuals use today to learn about various products and services, and provide feedback about their personal consumption experiences with regards to these products and services.

Online customer reviews are certainly relevant in the context of hospitality and tourism- in a recent report from TripAdvisor (2019), 72% of those surveyed reported that they either always or frequently read online reviews when making decisions about where to eat and things to do, and as many as 81% always or frequently use online reviews before booking a place to stay. Given these statistics, there is little doubt that consumers place a lot of trust in online reviews when making consumption decisions relating to hospitality and travel. In fact, a Nielsen survey suggests that as many as 70% of consumers trust online reviews as a form of advertising (Grimes, 2012).

If one were to somehow accurately exclude the reviews we knew to be deliberately falsified or fabricated, one might be tempted – certainly for the sake of convenience – to accept *all* remaining reviews as objective and trustworthy. One might even find support for such a position in the “rational actor” model of neoclassical economics under which we would deduce that

reviewers – possessing limitless cognitive ability and operating under full information – would be writing reviews that are not in any way biased by any prejudices, emotions or sentiments.

If we were to adopt a more realistic approach, however, we would allow for the fact that reviewers- being human- are limited in their capacity to process information, and that the reviews they write are often skewed by many of the same biases that afflict everyday decision making and judgments. Indeed, a number of seminal studies in cognitive psychology and behavioral economics have adopted alternative models that are rigorous yet permit realistic investigations into human behavior and decision making without invoking the neoclassical doctrine of perfect rationality (for example, Simon, 1955; Thaler, 1980).

We believe that Kahneman and Tversky’s (1979) prospect theory, which offers a powerful explanation of decision making under risk and uncertainty, might better uncover certain behavioral tendencies and cognitive biases that have the potential to distort the sentiment expressed in online consumer reviews. Under this theory, “prospects” – or potential outcomes – are weighed relative to a psychological reference point.

Two important properties result from this reference dependent framework of prospect theory- loss aversion and diminishing sensitivity. Whereas the former posits that losses loom larger than equivalent gains, the latter argues that for both gains and losses, as one moves further away from the reference point, changes in sensitivity occur at a decreasing rate.

In the context of a service experience one may think of this reference point as a service expectation, whereas one may think of gains and losses in terms of service performance above or below this expected level of service. Presumably, review sentiment – as reflected in sentiment scores resulting from a sentiment analysis - would reveal the extent to which the service received differs from the service expected. Accordingly, the objective of this study is to understand how

loss aversion and diminishing sensitivity affect review sentiment. While this objective might have appeared to be somewhat unrealistic only a few years ago because of the then limitations of text-mining programs, advances in the automated analysis of big data in the last decade have made processes such as sentiment analysis both quick and reliable. Consequently, the more specific objective of this research is to investigate whether sentiment scores (ranging from -1 to +1 obtained by using Python's VADER package to analyze a set of 132,486 TripAdvisor reviews) are susceptible to loss aversion and diminishing sensitivity- the two primary reference dependent behaviors explained by prospect theory. That certain behavioral inconsistencies may manifest themselves in aspects relating to online reviews would not in itself be a novel finding. It is long understood, for example, that negative reviews can hurt sellers more than positive reviews help (Basuroy et al., 2003). Chevalier and Mayzlin (2006) show that similar properties apply also to marginal impacts- incremental negative reviews hurt sales more than incremental positive reviews. Seemingly incongruent behavioral patterns have also been investigated in other aspects of online reviews. Tsang and Prendergast's (2009), for instance, examine whether inconsistencies in valence (positive or negative) between review text and ratings affect consumer perceptions of interestingness, trustworthiness and purchase intention. Although we readily acknowledge that the aforementioned studies provide a number of insights into the strand of literature in which the present study fits, none of the above contributions obtains measures based on sentiment analysis. Moreover, none of the studies mentioned above uses prospect theory as its explanatory framework. Interestingly, Tsang and Prendergast (2009) do briefly mention prospect theory, but develop their paper in a vastly different framework that results in objectives that are fundamentally dissimilar to our objectives. To the best of our knowledge, no prior study has examined the relationship between review rating and review sentiment under the lens of prospect theory.

2.2. Prospect Theory in Tourism Research

Behavioral aspects of travelers' decision making have long been of interest to tourism researchers. In this scholarship, it is generally accepted that in addition to various other drivers of choice and decision making, travelers rely extensively on past experiences (Kim, 2014; Zhang et al., 2016). In fact, Mazursky (1989) asserts that past travel experiences may be even more relevant than other external sources of information.

The importance of past experiences in molding traveler preferences underlines the applicability of prospect theory (Kahneman and Tversky, 1979) in tourism research. This is because prospect theory posits that the evaluations that people make tend to be reference dependent- that is, an individual's assessment of an outcome, product, service or experience is often made in terms of deviations from a certain point of reference. Two important and well-established principles relating to human preferences follow from this reference dependent evaluative process (Kahneman and Tversky, 1979): loss aversion and diminishing sensitivity. The former suggests that the deviations from the aforementioned reference point are valued differently depending on the direction of the deviation. More specifically, this principle asserts that individuals are more sensitive to negative deviations (losses) from the reference point than they are to positive deviations (gains). The latter – diminishing sensitivity – contends that for both positive and negative deviations, the magnitude of the distance from the reference point also determines the marginal impacts resulting from a particular deviation. For both gains and losses, deviations closer to the reference point produce higher marginal impacts than equivalent changes further away from the reference point.

The principles of loss aversion and diminishing returns explain the archetype prospect theory value function that is used to describe subjective assessments of specific outcomes. This value

function tends to have a higher slope for losses than for gains (loss aversion), and, in terms of shape, is concave for gains but convex for losses (diminishing sensitivity). Prospect theory also helps explain several routinely observed human preferences that may have been viewed as irrational, or at the very least, inconsistent, under neoclassical models of human behavior. The principle of loss aversion predicts, for example, why a gain of \$100 may not offset a loss of \$100- the disutility induced by the loss exceeds in absolute terms the increase in satisfaction resulting from the \$100 gain. The principle of diminishing sensitivity, on the other hand, would help explain why, for example, a \$10 discount on a \$20 item may appear more rewarding than a \$10 discount on a \$50 item, even though both cases result in equivalent savings (\$10).

There are a number of studies in the tourism literature that have used the principal conclusions of prospect theory – diminishing sensitivity and loss aversion, to investigate various dimensions relating to hospitality tourism consumption. As one might expect, it is the pricing literature within the fields of hospitality and tourism where reference dependent preferences have been of some interest. The notion of ‘reference prices’ – a standard against which consumers evaluate actual prices of a product to evaluate its attractiveness (Monroe, 1973), is invoked in a number of hospitality and tourism related studies (for example, Oh, 2003; Nicolau, 2008; Viglia et al., 2016). Reference dependent preferences have also been observed, for instance, in the context of tourism prices and tourist overspending behavior (Nguyen, 2016), tourist satisfaction scores (Kim and Canina, 2015), destination satisfaction and revisit intentions resulting from changes in destination image (Park and Nicolau, 2019), and wait times in tourism (Hernandez-Maskivker et al., 2019). In one of the earlier applications of prospect theory in tourism research, Nicolau (2008), using a multinomial logit model, observes significance levels of reference price dependence among Spanish vacationers. The Nicolau (2008) study detects substantial levels of loss aversion, as

manifested in Spaniards' higher levels of sensitivity to price increases relative to their reference price than the sensitivity exhibited to corresponding levels of price decreases. Asymmetric reactions to price fluctuations – consistent with the predictions of loss aversion - are also observed in Nicolau's (2011) study of destination choice using data from the Spanish Holidaying Behavior survey. Interestingly, however, the levels of loss aversion in this study are found to be moderated by certain subjective characteristics such as a person's cultural interest in the destination- individuals expressing more cultural appreciation for a destination tend to be less loss averse than those who were more culturally indifferent toward the destination.

Asymmetries explained by loss aversion have also been found in tourism demand across business cycles- Smeral (2017) argues that loss aversion may be one of the key reasons that income and price effects on tourism demand cannot be assumed to remain stable under varying macroeconomic conditions. Masiero and Qiu (2018) detect substantial levels of reference dependent decision making in destination choice. The authors observe loss aversion among long-haul leisure travelers in several relevant attributes including hospitality, attractions (cultural, natural and entertainment), services (food and dining, transportation), and travel budgets. Additionally, the authors also detect that inertia for reference levels is observed in several of these attributes (Masiero and Qiu, 2018).

Certainly, gains and/or losses representing deviations from reference points need not assume direct monetary values. For example, loss aversion and reference dependence have also been investigated in Hernandez-Maskivker et al.'s (2019) in the context of wait times in tourism. Using data obtained from visitors to theme parks, these authors find evidence of reference dependence in theme park visitors' willingness to pay a higher price for express passes. In this sense, waiting is perceived as a cost, and reference points are formed by the theme park visitors

based on expected wait times (Hernandez-Maskivker et al., 2019). Reference dependent evaluations are then manifested in the trade-offs between wait times and willingness to pay for express passes.

In recent years, there has been a realization in the literature that travelers' perceived helpfulness of online reviews too can be based on a reference dependent evaluative process: Park and Nicolau (2015) find for example that travelers find positive reviews to be less useful than negative reviews- a behavioral preference that the authors attribute to the principle of loss aversion. There is evidence that reviewers exhibit reference dependence. Mellinas, Nicolau and Park (2019) demonstrate that reviewers' assessments of a hotel's locations are influenced by how they evaluate other attributes describing a particular hotel. Equally importantly, these authors also argue that the asymmetry observed in these ratings – with dissatisfaction resulting in more severe reviews than the corresponding praises stemming from satisfaction – is consistent with the principle of loss aversion.

2.2.1 The relationship between rating and sentiment

The meteoric growth of social media in recent years has facilitated unprecedented levels of information sharing among consumers. While this information sharing also encompasses multiple other electronic channels of user generated content such as Twitter and Facebook, online reviews and ratings are widely recognized today as one of the key elements in the overall consumption process. For many people, online content is even more trustworthy than information obtained from other sources such as professionals and marketers (Fotis et al., 2012; Gretzel and Yoo, 2008). Indeed, Nielsen's Global Trust in Advertising Survey suggests that online customer reviews are second only to word-of-mouth recommendations from friends and family as a trusted

source of advertising (Grimes, 2012). It is hardly surprising therefore that each of the top 10 online retailers in the United States displays reviews for the products they sell (Askalidis, Kim and Malthouse, 2017).

Online reviews play a central role not only in the consumption of products, but also in the consumption of services and experiences including those relating to travel and tourism. Websites such as TripAdvisor and Booking.com are frequented by travelers before, during and after the completion of trips (Liu and Park, 2015) for purposes of obtaining information from reviews, and providing feedback about completed travel experiences. Online reviews are used by travelers in selecting and evaluating travel destinations, flights, hotels, restaurants, attractions, etc.

The trust that is accorded to online reviews by prospective travelers is evidenced by the number of people who use online reviews when making travel plans. Moreover, under the rigid and perhaps unrealistic assumptions of the age-old rational actor model of economics, one would expect that reviewers would be characterized by unlimited cognitive capacity, and be able to objectively write reviews that are free of any biases or sentiments. At the same time, one must consider, however, that several studies in cognitive psychology and behavioral economics have challenged the rationality assumption, and instead offered a number of viable alternatives. If examined under the lens of some of these alternatives, one may question the merits of deciphering online reviews at their face value.

Simon's (1972) theory of bounded rationality suggests for instance that because of limitations in both the availability of information as well as in the capacity of individuals to process information, there exist bounds on rationality that affect decision-making and in turn result in suboptimal decisions. Given the inherent uncertainty defining situations involving limited or incomplete information, individuals then rely on certain strategies or heuristics in efforts to make

decisions. In the context of travel behavior, online reviews and ratings could be thought of as one such heuristic mechanism that prospective travelers adopt to manage the uncertainty and information gaps that constrain travel related decision making (Park and Nicolau, 2015; Wattanacharoensil and La-ornual, 2019). One would suspect, however, that reviewers too would be impaired by many of the cognitive biases – including loss aversion and diminishing sensitivity - that affect general decision making and choice behavior (Mellinas et al., 2019; Park and Nicolau, 2015). We shall momentarily describe how loss aversion and diminishing sensitivity afflict review sentiment, but it should nonetheless be obvious here that reviews distorted by cognitive biases are fundamentally different from reviews that entail deliberate fabrication and manipulation. No willful intent is required on part of the reviewer in the former case, where reviews may simply be biased by the reviewer’s emotions and sentiments rather than by any calculated scheme or plan by the reviewer.

Sentiments are of course inherent in user-generated content. Sentiment analysis – sometimes referred to in the literature as sentiment mining - has in recent years been a powerful technique used in the literature (including the hospitality and tourism literature) to understand the valence of a particular review, which can range from negative to positive (Geetha, Singha, and Sinha 2017; Phillips et al., 2019). The process of sentiment analysis involves the use of computational linguistics along with natural language processing to extract subjective information (such as emotional inclination) from textual data (Salehan and Kim, 2016). The automated nature of the process makes it an efficient mechanism for processing big data like social media (Cheng, Chiang and Storey, 2012; Pang and Lee, 2008).

One would expect the previously described principle of loss aversion to predict an asymmetric effect of service performance received on rating sentiment. Recall that under the lens

of prospect theory, gains are weighed differently than equivalent losses. In the context of online ratings, the principle of loss aversion would specifically suggest that receiving a service that is worse than expected would induce a larger absolute impact on review sentiment than the corresponding absolute effect on review sentiment resulting from receiving a service better than expected. In simpler terms, negative deviations from service expectations weigh more heavily than positive deviations.

These expectations are determined by a state of reference – or a reference point. This reference point “corresponds to the decision maker’s current position, (but) it can also be influenced by aspirations, expectations, norms and social comparisons” (Tversky and Kahneman 1991, pp. 1046, 1047). One may therefore think of the sentiment expressed in particular online rating as the satisfaction (or dissatisfaction) resulting from the consumption of the service relative to an expectation about the service.

More generally the principle of loss aversion asserts that the disutility that individuals are subjected to from experiencing a lower than expected service performance eclipses the utility they obtain from experiencing equivalent higher than expected service performance. When investigating online consumer ratings, one would thus expect that dissatisfaction relative to the reference point induces a more severe negative review sentiment as compared to the positive sentiment resulting from corresponding levels of satisfaction. When the review sentiments are plotted as a value function, we would consequently expect to observe a higher slope for losses than for gains, suggesting loss aversion. This leads to our first hypothesis:

H.1.- Stemming from the prospect theory principle of loss aversion, we hypothesize that negative deviations in ratings from the reference point (receiving a service with worse performance than

expected) bring about a higher impact on review sentiment than positive deviations (receiving a service with better performance than expected) from the reference point.

Tversky and Kahneman's (1991) principle of diminishing sensitivity holds that the marginal impact resulting from a gain or loss varies based on distance from the previously discussed reference point. Specifically, diminishing returns suggests gains (losses) result in lower additional levels of satisfaction (dissatisfaction) as one moves away from the reference point. This property has been used across a number of areas of study in economics and psychology- consumer theory's property of diminishing marginal rates of substitution, producer theory's property of diminishing returns, and the intertemporal choice theory of discounting are all explained by the principle of diminishing returns (Hill and Neilson, 2007).

With regards to services, customer perceptions of service quality may be based on the gap between expected service and actual service (Parasuraman et al., 1985). While larger gaps between expected service and actual service would most certainly result in larger absolute changes in consumer perceptions of the service as reflected in review sentiment, diminishing sensitivity would suggest that as this gap increases, the resulting changes in review sentiment occur at a decreasing rate. More specifically, the principle of diminishing sensitivity would imply that when actual service received is only slightly below or above expected service, the marginal impact on review sentiment would be greater than when the service received is substantially below or above expected service. In other words, as the service received differs increasingly from the expectations as defined by the reference point, the marginal change in sentiment decreases. This is true for cases when service received fails to meet expectations, as well as when service received exceeds expectations.

This also implies that a perfectly neutral review sentiment (a sentiment score of 0) might suggest that the service received by the reviewer was exactly equal to the service expected. Accordingly, changes in service received increasingly departs from expectations, the marginal impact on the review's sentiment score falls.

Accordingly, a graphical representation of the value function for the review sentiment relating to a specific service would therefore – in addition to exhibiting a higher slope for losses than for gains – be expected to assume a convex shape for losses and a concave shape for gains. This occurs because the marginal change in sentiment increases at a decreasing rate as service received exceeds service expected, and decreases at a decreasing rate when service received is below expectations. The following therefore serves as our second hypothesis:

H.2.- Regardless of whether the service received is better or worse than expected, variations in ratings closer to the reference point result in higher marginal impacts on sentiment than variations further away from the reference point.

An obvious question that arises here has to do with how the reference point – in other words the expected level of service – could be measured. While the prospect theory notion of reference dependence undoubtedly provides rich theoretical insights, the testing of loss aversion and diminishing returns using real data requires the identification of actual reference points in the domain in which consumer behavior is being assessed.

In this case the domain is review sentiment, and presumably the sentiment expressed by a consumer in a review reflects the extent to which his/her service experience differs from his/her expectations as defined by the reference point. As one might expect, the identification of reference points for individual consumers is not a straightforward task when using secondary data. In an experimental setup, one may be able to manipulate reference points by varying the status quo

(Hardie et al., 1993). The present study, however, uses secondary data, and experimental manipulations of the reference point are thus not an option. We must rely therefore on some alternative estimation of the service expectation which in this study describes the consumer's reference point.

Two general standards exist in the empirical prospect theory literature to identify reference points (Mazumdar et al., 2005). The first of these pertains to internal memory-based standards. This approach involves consumer assessments against a standard established by making use of past information. In the service context, this reference point might then be, for instance, a consumer's past experience with that particular service. A diner's perceived satisfaction during a service experience at a certain restaurant on a particular visit may therefore be assessed against his/her typical experience at that restaurant in the past. A hotel guest's perceived satisfaction during a stay may be assessed against his/her experience during previous stays at the hotel. An airline passenger's satisfaction on a particular flight could be assessed against his/her previous experiences on that route. In the diner example, we could, if the necessary data were available, use a measure that reflects the diner's median experience across multiple visits at that restaurant as a satisfactory reference point. A similar measure could be obtained for the hotel guest and air passenger mentioned above. In the context of online reviews however, there are some limitations in the estimation of reference points that may have been established using this standard. For example, we would not typically have sufficient data to discern the consumer's past experiences with that specific service. While we may have at our disposal a reviewer's review history, this history would reflect his/her consumption experiences across a multitude of non-comparable products and experiences. Indeed, it is rather unlikely that an individual reviewer would have on the same platform multiple reviews of the same restaurant with each review reflecting an

independent visit to that restaurant. Similarly, it is quite unlikely that a hotel guest would leave on the same platform a different review for a particular hotel after each visit, or that an airline passenger would leave a different review for a flight experience each time he/she flies a particular route. Even if some reviewers did provide multiple reviews for the same restaurant, hotel or flight route, the number of reviewers doing so would not be sufficient to make meaningful inferences.

The second standard to estimate consumer reference point overcomes this limitation as it does not rely on the consumer's own experience with that particular service over time. This standard recognizes that reference points tend also to be established externally. The standard for comparison in the aforementioned diner example could for instance be the distribution of service experienced by *other* diners. Certainly, online reviews themselves provide a reasonably strong estimate of the service experienced by others, and therefore provide a reasonably strong estimate of the reference point. Consequently, we believe that the median service experienced by others – as reflected in the median rating of a particular service – would serve as a satisfactory reference point for purposes of this study.

2.3. Research Design

2.3.1. Methodology

In order to test loss aversion and diminishing sensitivity in the context of sentiment analysis, we stem from the basic tenets proposed by Kahneman and Tversky (1979) and incorporate them into a regression model. In particular, Kahneman and Tversky's (1979) value function $v(x)$ is described in terms of gains and losses (so a reference point is needed to capture the differences between the actual value and the expected value), is steeper for losses than for gains [$v(x) < -v(-x)$, $x > 0$] bringing about *loss aversion*, and has an S-shape curve (concave for gains

$[v''(x)<0, x>0]$ and convex for losses $[v''(x)>0, x<0]$ resulting in *diminishing sensitivity*.

Therefore, the proposed model is:

$$Sent_i = \alpha + \beta \cdot Gain_i + \gamma \cdot Loss_i + \theta \cdot Gain_i^2 + \varphi \cdot Loss_i^2 + \sum_{j=1}^J \delta_j \cdot CV_{ij} + \varepsilon_i$$

where $Sent_i$ is the review sentiment ranging from -1 to +1, $Gain_i$ is defined as $(Actual\ Rating_i - Expected\ Rating_i) \cdot D_1$, where $D_1=1$ if $(Actual\ Rating_i - Expected\ Rating_i) > 0$ and $D_1=0$ otherwise; $Loss_i$ is defined as $(Actual\ Rating_i - Expected\ Rating_i) \cdot D_2$, where $D_2=1$ if $(Actual\ Rating_i - Expected\ Rating_i) < 0$ and $D_2=0$ otherwise; CV_{ij} are a set of J control variables related to the reviewer, the service and the route; and ε_i is a random term. Finally, $\alpha, \beta, \gamma, \theta, \varphi$ and δ_j are coefficients to be estimated. Loss aversion will be detected if the loss parameter is higher than the gain parameter ($\gamma/\beta > 1$) and diminishing sensitivity will be evidenced if the square of the gain variable has a negative and significant parameter (θ) and the square of the loss variable has a positive and significant parameter (φ). The parameters δ_j are associated with the j -th control variable.

2.3.2. Sample and variables

A sample of 157,036 airline reviews was retrieved from TripAdvisor by looking at 20 US airlines. After checking for missing values, we are left with a final sample of 132,486 observations.

The dependent and independent variables used in this study are defined as follows:

Dependent variable.

In order to obtain review sentiment, we calculated sentiment scores for each review in the dataset. Sentiment analysis as part of opinion mining was applied to uncover opinions and to assess contextual polarity of online consumers within a given text (Alaei, Becken and Stantic, 2019). In order to analyze the data we used the VADER (Valence Aware Dictionary and Sentiment

Reasoner) package in Python. VADER employs a lexicon and rule-based sentiment analysis. A lexicon typically refers to a list of lexical features like words which are labelled based on semantic orientation (Hutto and Gilbert, 2014; Liu, 2010). VADER considers both intensity as well as polarity of emotion. Hutto and Gilbert (2014) show that VADER outperforms other tools/algorithms relating to sentiment analysis with regards to accuracy of text classification in social media data. VADER employs a dictionary to associate the lexical characteristics of the given text to intensity of emotion. Five heuristics are considered to assess how contextual elements effect the text which is being analyzed – punctuation, capitalization, degree modifiers, the impact of contrasting conjunctions like “but”, and the examination of the tri-gram before a sentiment-laden lexical feature . The calculated scores from VADER show normalized lexicon ratings between -1 (extremely negative) and +1 (extremely positive).

Independent variables

The central independent variables are “rating” which is defined as the the overall rating of the specific flight (airline and route) the reviewer used, measured on a scale from 1 to 5 and “expected rating” defined as the median of the overall rating for an airline and route. Note that, as indicated previously when discussing the types of reference points, getting proper reference points is a methodological challenge; to refine as much as possible the estimation of reference points we attempt to reflect the company and the specific product reviewed. Accordingly, for this empirical application, not only do we consider the median value of the airline but also we control for the route reviewed. We use this value as the reference point to which the reviewers compare the service they receive.

Variable	Mean/Proportion	Std. Error
Overall rating	3.73	1.31
Expected rating	3.88	1.04
Gain	0.25	0.54
Loss	-0.44	0.84
Level0	7.79%	-
Level1	6.5%	-
Level2	10.54%	-
Level3	17.8%	-
Level4	15.31%	-
Level5	15.47%	-
Level6	26.59%	-
Review count	102.2	274.9
Helpful count	40.07	165.2
Experience	5.50	3.44
Visited cities count	90.3	209.7
Photos	154.3	1890
Excellent	46.06%	-
Very good	25.39%	-
Average	9.82%	-
Poor	3.51%	-
Terrible	2.73%	-
Value for money	3.61	1.30
Domestic flight	69.15%	-
Economy class	85.14%	-

We include in the model other variables that are used as control variables: i) Reviewer's level, which refers to the extent to which the specific reviewer shares his/her experiences in TripAdvisor in general (for example, the more reviews/images a reviewer write and post in TripAdvisor, the higher level scores this reviewer obtains); ii) Review count reflects the total number of reviews written by a specific reviewer; iii) Helpful count: it is the total number of helpful votes the reviewer

has received divided by the total number of reviews written; iv) Experience shows the period of time the individual has been reviewing for TripAdvisor; v) Visited cities count indicates the number of cities the reviewer has visited; vi) Photos which reflects the number of photos the reviewer has posted; vii) Distribution of ratings: within the total contributions, it shows the proportion of ratings the reviewer has classified as “Excellent”, “Very good”, “Average”, “Poor” and “Terrible”; viii) Value for Money, which is measured on a scale from 1 to 5; ix) Domestic flight that represents the type of flight, domestic vs International; and x) Economy class, which is a variable that indicates if the reviewer flew in economy class. Table 2.1 shows the descriptive statistics of these variables.

2.4. Results

Prior to estimating the model, collinearity and heteroskedasticity are tested. Accordingly, we find, for collinearity, that all the Variance Inflation Factors are below the recommended value of 10 (Hair et al., 2006; Neter et al., 1989), and for heteroskedasticity, that the Breusch-Pagan confirms its existence ($F=651.3$; $p<0.001$), hence the White heteroscedasticity-consistent standard errors are utilized.

Regarding the parameters of interest, in Table 2.2 we observe that the four key variables (*gain*, *loss*, *gain*² and *loss*²) are significant. The loss parameter is significantly greater than the gain parameter (Wald test=55.78; $p<0.001$), which supports the idea that travelers react more strongly to dissatisfactions (finding a worse service than expected) than to satisfactions (finding a better service than expected), which represents evidence in favor of loss aversion supporting Hypothesis 1. In other words, receiving a service of a lower than expected quality brings about a stronger reaction in the sentiment variable than getting a service of a better than expected quality; i.e.

dissatisfaction relative to the reference point induces a more severe negative review sentiment as compared to the positive sentiment resulting from corresponding levels of satisfaction. Figure 2.1 shows the different slopes for the loss and gain regions.

As for the quadratic terms, both are significant, negative for the gain parameter and positive for the loss parameter, resulting in a concave line for gains and convex curve for losses (see Figure 2.2), in line with the diminishing sensitivity property of prospect theory. This also supports Hypothesis 2 that, regardless of whether the service received is better or worse than expected, variations in ratings closer to the reference point result in higher marginal impacts on sentiment than equivalent variations further away from the reference point. Certainly, larger gaps between expected service and actual service bring about larger absolute changes in consumer perceptions of the service as reflected in review sentiment, and with the diminishing sensitivity property we find that as this gap increases, the changes in review sentiment manifest themselves at a decreasing rate.

Most of the control variables show significant effects: the level that the reviewer has attained in TripAdvisor has a significant effect, in fact, the higher the level the greater the impact on sentiment. The number of reviews posted, the proportion of times the reviewer has described the service as excellent or very good, and value for money has positive effects on sentiment. The period of time (experience) the individual has been reviewing for TripAdvisor, the proportion of times the reviewer has described the service as average, poor or terrible, the domestic character of the flight and the economy-type seat present negative impacts. Finally, the number of times these reviews have been helpful, the number of cities visited, and the number of posted photos do not seem to have any effects on sentiment.

Table 2.2. Effect of loss aversion and diminishing sensitivity on sentiment

Variable	Coefficient	Std. Error
Gain	0.071 ^a	0.005
Loss	0.136 ^a	0.006
Gain ²	-0.021 ^a	0.002
Loss ²	0.009 ^a	0.002
Level2	0.037 ^a	0.010
Level3	0.040 ^a	0.010
Level4	0.042 ^a	0.010
Level5	0.049 ^a	0.010
Level6	0.062 ^a	0.010
Review count	2E-05 ^a	6E-06
Helpful count	0.001	0.004
Experience	-0.002 ^a	4E-04
Visited cities count	1E-05	9E-06
Photos	1E-06	9E-07
Excellent	0.031 ^a	0.010
Very good	0.179 ^a	0.012
Average	-0.082 ^a	0.021
Poor	-0.300 ^a	0.033
Terrible	-0.257 ^a	0.031
Value for money	0.211 ^a	0.002
Domestic flight	-0.017 ^a	0.003
Economy class	-0.085 ^a	0.004
Constant	-0.279 ^a	0.009
R-squared	0.3126	
Adjusted R-squared	0.3125	
F-statistic	2739.6 ^a	

^a=p<0.001

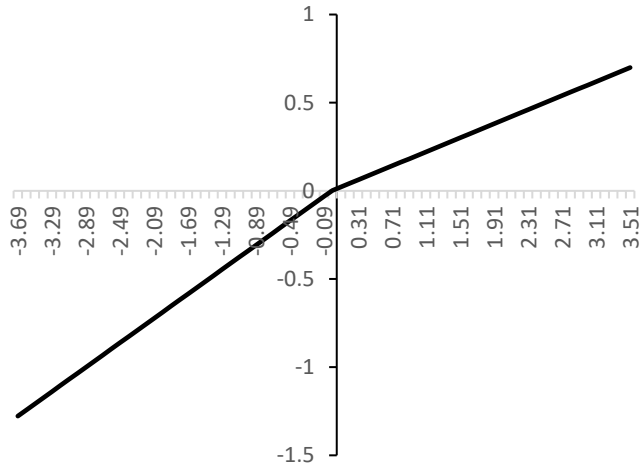


Figure 2.1: Loss aversion in sentiment analysis

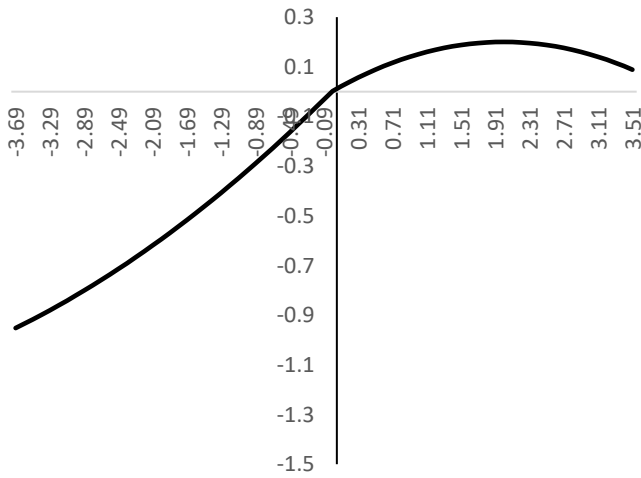


Figure 3.2: Loss aversion and diminishing sensitivity in sentiment analysis

2.5. Conclusion

This article analyzes the relationship between ratings and sentiment by introducing the tenets of prospect Theory. Specifically, we test loss aversion and diminishing sensitivity on a sample of 132,486 airlines reviews and find first that negative deviations in ratings (receiving a service with worse performance than expected) bring about a higher impact on sentiment than positive deviations (receiving a service with better performance than expected), thus confirming loss aversion. Second, regardless of whether the service received is better or worse than expected, variations in ratings closer to the reference point result in higher marginal impacts on sentiment than variations further away from the reference point, thus proving diminishing sensitivity.

Other variables also have a positive impact on sentiment: the reviewer's level attained in TripAdvisor, number of reviews posted, proportion of times the reviewer has described the service as excellent or very good, and value for money. Other variables that have a negative effect are individual's experience reviewing for TripAdvisor, proportion of times the reviewer has described the service as average, poor or terrible, the domestic character of the flight and the economy-type seat.

The results obtained have relevant theoretical and managerial implications. Regarding the theoretical implications, it is important to note the following ones: 1) The use of prospect theory provides further insights in sentiment analyses. While some previous studies have looked at the effects of reviews on some outcomes (such as purchase intention or sales ranks), none of them have used sentiment measures and tested prospect theory in a tourism context. The fact that prospect theory has been confirmed in the relationship between sentiment and reviews implies that, in order to have a comprehensive view of the effect of reviews on sentiment measures, the principles of prospect theory should be considered; otherwise, relevant knowledge may be omitted.

2) The analysis of the effects of reviews on sentiment should include relative measures rather than just absolute metrics. For research to identify potential asymmetries, the studies should use reference points; while using absolute values can give an indication about the influence of reviews on sentiment, we have shown that *loss aversion* and *diminishing sensitivity* exist, and both properties provide richer information about this influence and better reflect the way people make their assessments and provide their rating values. 3) The effect of reviews on sentiment is not free of cognitive bias. Beyond the fact that reviewers have limited cognitive capacity (as expected), the main consequence is that they cannot objectively write reviews that are bias-free. Thus, the significant parameters found in this study regarding loss aversion (*gain* and *loss*) and diminishing sensitivity (*gain*² and *loss*²) prove that these are cognitive biases that should be taken into account when analyzing the valence of ratings and effect of reviews. This consideration should take place either to explicitly include the relevant variables (reference values) to control for this cognitive bias or to recognize that spurious estimates can be obtained if these benchmark values are not included.

Concerning the managerial implications, the confirmation of loss aversion and diminishing sensitivity properties has critical implications for decision-makers.

First, when the service received fails to meet expectations, loss aversion implies that the negative impact on sentiment is greater than the positive effect of an increase in ratings of the same amount. For example, a reduction in the overall ratings from an average value of, say, 4 to an actual value of 3 can be perceived as a reduction in the quality of service which has an effect on review sentiment. If managers try to solve this situation and decide to implement strategies to increase the ratings back to 4, the increase from 3 to 4 will not bring about the same size of variation (with a different sign) in sentiment as the aforementioned reduction. The variation in ratings from 3 to 4

will cause a lower positive effect on sentiment than the negative effect derived from the variation from 4 to 3. Consequently, in practical terms, the “efforts” to get the rating back to the previous upper levels necessarily have to be greater than the “inattention” that caused the reduction in the rating. Note that, even though our study uses an overall rating to test prospect theory, if the rating values of individual attributes were available, the analysis can be easily extrapolated so that the specific attributes with lower-than-expected quality can be detected. Accordingly, measures to change this low-quality level could be implemented and, in line with the results obtained and the aforementioned suggestion, the efforts to increase this quality should be more intense than the inattention that led to its reduction.

Second, when the service received exceeds expectations, loss aversion means that while the potential above-the-standard point is beneficial to the customers (positive sentiment), this excellence should be maintained at those levels; otherwise, if a reduction in service performance is observed, the negative effect on sentiment will be drastic compared to the initial increase. If the expected rating is 3 and the customer’s rating is 4, there will be a positive impact on sentiment; however, for the next consumption occasion the new expected rating will be 4, so if the actual rating for this future consumption occasion is 3, then the impact on sentiment will be more negative than the aforementioned positive impact. In today’s airline industry, boarding time is a critical issue for the following reasons: i) waiting time is, in general, a determinant issue regarding passenger satisfaction; from a marketing perspective, it is a non-monetary cost (i.e. physical effort and/or emotional stress) they incur to obtain the main service (i.e. the flight) (Ahmadi, 2019); ii) when American Airlines started to charge for checked bags a decade ago, in May 2008 (New York Times, 2008), the rest of airlines followed suit and passengers began to fight for space in the overhead compartment to place their carry-on, and priority and speedy boarding became an issue

for airlines; and iii) from a financial viewpoint, airlines want passengers to be on the plane as soon as possible as airlines only generate profit when their airplanes are in the air (Notomista et al., 2016). In other words, as the airline industry is strongly affected by airplane utilization, airlines try to avoid remaining inactive at the airports during turnarounds (the time an airplane spends on the ground) as the estimated cost is \$30 per minute (Notomista et al., 2016).

These three reasons explain the constant remodeling of boarding processes that airline companies continuously undertake. For example, according to New York Times (2019), Delta Air Lines changed its boarding process in January 2019, United Airlines in September 2018, Alaska Airlines in 2018 but modified in early 2019, JetBlue Airways in November 2018, American Airlines in March 2017 and Southwest Airlines keeps experimenting in selected airports new ways to speed up boarding. In this context, let us suppose an airline is implementing a new speedy boarding system so that passengers get on the plane in a more efficient and quick way, reducing the boarding time by a certain number of minutes. While this will be perceived as an increase in the quality of the service, the airline should regard the new boarding times as long-term values so that the necessary arrangements need to be organized to maintain these times. Instead of looking at this action as a short-term tactic to entice customers, a more strategic long-term view is required because the new boarding times are the new reference values the passengers will set in their minds and will remember. Although the time reduction brings about an increment in satisfaction, the dissatisfaction caused by a subsequent time increase (even if occasional) will be higher than that increment in satisfaction.

Third, because of the diminishing sensitivity found, when a firm is enjoying a very good reputation materialized by high rating values, it seems to be more protected as a “cushion” seems to exist. Remember that if the service received is better than expected, variations in ratings further

away from the reference point result in lower marginal effects than equivalent variations closer to the reference point. In practical terms, it means that the negative effect of a not-so-good experience on sentiment will be lower if the rating changes from 4 to 3 than if the rating shifts from 2 to 1. Consequently, it is obvious that when facing a service failure, high- and low-rated companies must try their best to implement service recovery strategies; nevertheless, while high-rated companies may have some leeway (assuming it is not anything major), low-rated companies must work harder to solve the issue and better compensate its customers because the negative influence of a bad experience will reduce further the sentiment measure of these low-rated companies than that of high-rated firms.

Regarding limitations, if customers look at reviews, the publicly available average ratings are most likely to determine the customer's reference points; however, if reviewers remember the values with which they rated the service in the last consumption occasion, these values could form these reviewers' reference points. In other words, while in this study we rely on external reference points (i.e. published average values of ratings), it could be interesting to see, as future research, whether internal memory-based reference points (e.g. last value with which the reviewer rated the service) offer similar results.

Also, as future avenue for research stands out the effect of ratings of specific items on review sentiment. We have looked at the overall rating, thus it could be interesting to see whether the ratings of individual items exert an effect and which ones are more determinant. Finally, even though the dataset is large, cross-validation is still needed so that different platforms and different industries would help reinforce the results obtained.

Chapter 3: Do Hospitality Promotions Work? A Finance Perspective

Abstract

Promotions are frequently deployed by firms in the hotel industry as a way to boost occupancy in times when excess capacity may be anticipated. While promotions may indeed augment revenues and other accounting measures commonly used in by hotels to assess performance, the impact of these sales tools on long-run finance-based indicators remains largely unexplored. Exploiting a rich dataset consisting of over 300 corporate level promotions by the hotels spanning nearly three decades, this study shows that promotions can be detrimental to long run performance. This is because hotel promotions tend to erode market value. Relevant implications are discussed.

Keywords: promotions, hotel performance, event study

3.1. Introduction

It might seem implausible to those unfamiliar with the literature on sales promotions that these routinely deployed marketing devices could at times be detrimental to firm performance. Yet there is at least some evidence, albeit mostly from non-service industries that this may indeed be the case with certain promotions (see for example, Pauwels et al., 2004). It is for this reason that promotions are sometimes viewed in the academic scholarship as a “double-edged sword” (Lee and Tsai, 2014) - offering an assortment of prospective benefits, but potentially also ushering in a slew of unwanted consequences for businesses.

In the hospitality industry landscape, however, the long-run implications of sales promotions remain largely unexplored in the academic literature. In general, it is the short-term impacts of promotions in the hospitality terrain that are better understood (see Choi and Mattila, 2014; Kim and Kang, 2018; Zhu et al., 2019). This, of course, is not particularly surprising given that sales promotions as a communication tool in marketing are designed to have a short-term effect on sales. And studies in this strand of the scholarship that investigates firm performance by examining short-run indicators quite often find promotions to be an effective sales strategy that can help service providers boost metrics, such as revenues, by disposing inventory that might otherwise have gone unsold.

If one considers the characteristics of hospitality industry, the use of promotional campaigns by hotels might appear to be an unproblematic – perhaps even an enticing proposition. This is because the industry is typified by perishable inventory, high fixed costs but low variable costs, and dynamic yet reasonably predictable demand patterns. Insights from the pricing literature (Brown and Dev, 1999; Jeffrey et al., 2002) would suggest that these attributes would be quite conducive for the deployment of sales promotions by hotels, especially in off-peak periods and in

other times of subdued demand for rooms. Indeed, marketing promotions that offer discounted weekend rates, off-season specials, and other similar bargains are widespread across the hospitality industry, frequently devised by management as a mechanism to bolster occupancy and revenue numbers in times when excess supply may be anticipated.

Moreover, promotions have an added benefit in that they entail relatively low risk for service providers. The appeal of promotions lies, therefore, in the prospect of this approach to expand demand without incurring the considerably more risk that may be inherent in other strategies – such as new product introductions - that management may also consider when attempting to stimulate sales (Blattberg and Neslin, 1990). During extended periods of economic uncertainty, like that encountered in financial downturns, it would be quite reasonable to expect that hotel occupancy numbers would be low and that managers would be more cautious. In such intervals, promotions may be perceived by businesses to be an alluring countermeasure to boost performance metrics (Quelch and Jocz, 2009; Bogomolova et al., 2015). Even during the ongoing COVID-19 pandemic which has in many ways ravaged the service-based industries (Bartik, 2020; Barrero et al., 2020; Gössling et al., 2020; Sharma and Nicolau, 2020), there appears to be a palpable effort on the part of service providers to deploy a host of marketing promotions (see Ollila, 2020) to augment ailing revenues.

Despite the aforementioned considerations - as well as other mostly short-term benefits that likely explain the popularity of the sales promotions as a marketing strategy – what is quite evident is that less is known about how these promotions impact longer run indicators like market value of the accommodation providers involved. While short-term performance measures including ‘top-line’ metrics such as revenues and ‘bottom-line’ metrics such as profits are admittedly important and have been the focus of analysis of several studies in this domain, the use of market value as

the module for analysis provides an understanding of the long-term ramifications of rolling out promotions – an aspect of promotions that has frequently been overlooked in the extant hospitality literature. Moreover, not much is known about how different *types* of certain promotional activities impact firm performance in the lodging industry. Given the fundamental differences in the characteristics of the wide range of promotional tools that are employed in the hotel industry (for example, price discounts, volume discounts, coupons, contests, gifts, etc.), it would seem imprudent to assume that all promotions, regardless of type, would have similar effects.

Whereas findings from the manufacturing and retail industries might offer certain preliminary insights into some of the issues being developed in this discussion, one must bear in mind that the hotel industry is unique in its own right, and inherently different from other types of industries. Consequently, it would be premature to make any conclusions relating to sales promotions offered by companies in the hospitality domain based on analysis conducted using data from manufacturing and retail organizations. It is this knowledge gap towards which the present study contributes. This paper assesses the effects of sales promotions in the hospitality industry on long term firm performance. Specifically, exploiting three decades of data entailing 300 corporate level promotional campaigns from major American hotel brands, this study investigates the consequences of the hotel industry promotions on the forward-looking measure that is market value. The market value approach has several benefits, many of which are detailed in the methodology section. The most significant benefit, however, might be that the approach offers a lens into the long-term implications of an intervention – such as a new sales promotion – soon after it is deployed. This in turn has consequences for service design, most notably that it offers service providers an opportunity to adjust or discontinue promotions that may be determined to be detrimental before important accounting-based measures are markedly impacted.

The paper is organized as follows: Section 2 provides an overview of the relevant literature on marketing promotions, outlining pros and cons of this strategy in both the short-term as well as the long-term. Section 3 serves to detail the methodology, and will also describe how the data used in the analyses were obtained. Section 3 will, in addition, provide a discussion of the merits of using firm value as a metric to assess the effectiveness of marketing promotions in the service industry. Section 4 will outline the primary findings of this research, and Section 5 will highlight its relevant theoretical and managerial implications.

3.1. Literature Overview and Hypotheses

Although sales promotions have extensively been studied in the broader academic literature, a number of gaps that warrant further investigation remain in this scholarship. First, the majority of the papers in the strand of the literature investigating the effects of promotions have relied primarily on data from the manufacturing and retail industries. Within the hospitality literature - at least from a corporate standpoint - promotions remain comparatively understudied. When hotel promotions have been examined in the hospitality literature, much of the research has been consumer focused, with studies having looked at the effects of promotions on consumer perceptions (Yang et al., 2016), guest attitudes and purchasing behavior (Christou, 2011), customer decision choice (Dotson and Clark, 2004), etc. It is certainly true that some of the more general conclusions drawn from analyses of promotional activities in manufacturing and retail might provide certain insights that would be applicable across all industries, including the hospitality industry. However, service-oriented industries like hospitality are unique in many respects, and warrant separate investigation. Perhaps the most notable difference between service rich industries like hospitality and other industries – at least in the context of the present research - pertains to

pricing practices. The relatively stable demand patterns found in manufacturing and retail businesses mean that prices in these industries also remain reasonably stable in the short run. In these industries, day-to-day price changes would be unusual, and promotional discounts when offered, may constitute one of the few instances when merchants may sell below pre-set price levels. In contrast, the attributes of the hospitality industry provide opportune conditions for dynamic pricing to be implemented. In fact, by 2015, 60% of US hotels were using dynamic pricing (Hospitality Technology, 2016). In addition to a more stochastic demand relative to manufacturing and retail, the hospitality industry attributes that are conducive to dynamic pricing include perishable products, finite selling horizons, and price-sensitive consumer base (Bitran and Caldentey, 2003). Given the constant variability in hotel room prices, with intermittent low room rates almost expected as part of routine price fluctuations that are associated with dynamic pricing, one is certainly left wondering whether promotions might still have any beneficial effects for accommodation providers.

Second, much like in the spectrum of approaches used in the general business literature to assess the effectiveness of most other types of managerial decisions, the preference when evaluating the success of sales promotions has been on the use of metrics that emerge quickly - in the weeks and months that follow the rollout of these oft-used sales tools. Included in the range of indicators that become available in these short time horizons are both 'top-line' measures like revenues and sales volumes as well as 'bottom-line' measures like net earnings and net profits. Marketers have seemingly favored such performance measures over the years (Assmus et al., 1984; Lodish et al., 1995), and one presumes that the importance also accorded to such metrics in the academic literature must only reflect longstanding industry preferences that call for quick data dissemination and accelerated information flows.

And while there is ample empirical evidence that promotions can indeed provide an immediate boost to metrics such as sales volumes, it has also been documented in the literature that this increase is usually short-lived, as a return to pre-promotional sales levels tends to be observed not long after the promotional programs have been rolled out (see Hanssens, 1998; Dekimpe et al., 1999). Prior research in this strand of this literature has also considered other types of performance measures, such as those that describe a firm's relative position in the overall market. Because these metrics (for example, market share) facilitate easy comparisons across firms within the same market segment, they have the benefit of implicitly being able to control for changes in consumer tastes and preferences, and are therefore also useful when assessing the effectiveness of managerial interventions like new promotional undertakings. Nonetheless, even with these indicators, the benefits for promoting brands have mostly been found to be temporary. Using data from the manufacturing industry, Srinivasan et al. (2000) observe, for instance, that any changes in market share resulting from temporary price changes tend not to persist once normal price levels are restored.

Consumer focused approaches have also been a mainstay in the literature examining the effects of promotional activities, and the findings of these studies are quite consistent with those using the aforementioned top and bottom-line metrics as units of analysis. Pauwels et al. (2018) use a persistence modeling technique to analyze weekly sales data of perishable and storable products, and observe no significant lasting effects of promotions on either category incidence, brand choice or purchase quantity. Even in online environments, positive effects associated with promotions have, in general, been found to be temporary. Luo et al. (2014), for example, use field experiments to conclude that in the short run, price promotions have the potential to increase consumer purchase likelihood in internet-based mediums.

At first glance it might appear unproblematic for any positive changes in the aforementioned short-run performers indicators resulting from the deployment of sales promotions to fade with time. Certainly, for many types of managerial decisions to be deemed successful, it need not be necessary for any benefits attributable to the said managerial choices to endure. For this reason, managers may even be lured into making conclusions about the effectiveness of a recently deployed sales promotion soon after the aforementioned indicators become available. Even a temporary boost in firm performance resulting from a sales promotion may be seen by managers as worthwhile. Reasoning such as this, however, may be premature, for it implicitly assumes that while any ascertained positive effects might decrease with time, no negative effects are associated with the promotions over longer time horizons.

Indeed, there has been a growing body of the literature that has shed light on the more adverse effects of promotions over longer time horizons. In one of the most extensive studies of its kind, Zhang et al. (2019) use a randomized field experiment involving more than 11,000 retailers and 100 million customers to show that while promotions provide a substantial immediate boost to online retail sales volumes, over the longer run these promotions can have certain detrimental effects. In particular, the authors suggest that a promotion on an item may lower the price that consumers pay for the item thereafter, for during future purchases, it may induce a more strategic search for lower prices. Along the same line, analysis of the airline industry by Li et al. (2014) shows that the deployment of promotions can result in customers anticipating discounts for future purchases, and therefore strategically timing purchase behavior.

Despite the importance given to the short-run indicators in industry circles, there has been a noticeable trend in more recent decades toward at least recognizing finance-based measures as viable alternatives. In the last few decades corporations have been outwardly forthright about this

shift in preferences, with many even declaring in their mission statements the ultimate business goal of maximizing value for shareholders (see Burton, 1996; Conchar et al., 2005). Because managers see the short-term, i.e., temporary potential of promotional actions in stimulating sales, they tend to repeat promotions with the intention of having a long-lasting and sustained effect on revenues. Frequent promotions, however, lead to guests expecting promotions, and possibly even deferring bookings when no promotions are available. Consequently, these repeat actions lower consumer reference prices and negatively affect firm value in the long term. Hypothesis 1, therefore, is stated as follows:

Hypothesis 1: The deployment of sales promotions erodes the market value of service providers in the hospitality industry

When one thinks of sales promotions, it is often price promotions that first come to mind. Typically, price promotions are designed to incentivize purchases by enhancing value for the consumer by reducing rates for a given quantity (Raghubir and Corfman, 1999). Indeed, price promotions are widespread across the hospitality industry. Over a third of corporate level promotions in the dataset used for this study entailed price promotions of some sort. There are, however, other types of promotional activities that are also routinely used by hotels to increase occupancy. Volume-based hotel promotions, for instance, are those that offer discounts based on number of room-nights purchased. These types of promotions may include discounts for both the purchase of a single room for multiple nights, and discounts for the purchase of multiple rooms for a single night. In addition to price discounts and volume discounts, hotels frequently offer promotions for members of their loyalty programs. Other promotions may be in the form of coupons or free gifts. Although all types of promotional activities may be drafted by management

to stimulate sales, the fundamental characteristics of each of these promotional activities are very different.

When the reduction in money is made tangible, it means that consumers perceive a more direct reduction in the price. In contrast, when the promotions simply involve benefits that are intangible with regards to money (gifts, etc.) consumer price perceptions remain largely unaffected. Accordingly, promotional activities with a tangible monetary component (like price discounts) lower consumer reference prices in the long run. This detrimental effect is in turn reflected in metrics like firm value. Note that although gifts may be “tangible objects”, they are not perceived (at least not that immediately) as reductions in prices, and therefore should not be considered tangible with respect to prices. This leads to the second hypothesis as follows:

Hypothesis 2: Promotional activities (like price discounts) that entail a tangible monetary component have a more negative impact on firm value than promotions that do not entail a tangible monetary component

3.2. Data and Methodology

In order to estimate the impact of promotional activities in the hospitality industry on firm performance, a finance-based approach, stemming from market-value modelling is used. The analysis exploits data from securities market to estimate effect of a shock or intervention on a firm, and provides a fitting framework for quantifying the impact of activities like new promotional undertakings. Under the market-based approach employed in this and other methodologically similar papers (for instance, Nicolau, 2002; Wiles and Danielova, 2009; Homburg et al., 2014; Kim and Mazumdar, 2016), the impact of a shock is reflected in the magnitude of any changes in the firm’s valuation in the days surrounding the shock (Kothari and Warner, 2007).

The finance-based metrics utilized in the present study contrasts sharply from accounting-based metrics which have increasingly been criticized in recent times, including in the hospitality and tourism literature for being overly simplistic and poor measures of performance (Assaf and Tsionas, 2019). Market valuation techniques based on stock market data offer several benefits in comparison with methods that utilize more general accounting data such as profits and revenues, as well as standard hospitality specific accounting metrics like occupancy rate, average daily rate (ADR) and revenue per available room (RevPar). In order discern benefits provided by finance-based measures, an understanding of the limitations posed to analysts when using the aforementioned accounting metrics is perhaps necessary. One suspects that accounting metrics are favored by organizations because they are readily available and therefore permit convenient assessments of managerial decision making. Using before and after comparisons, analysts when using accounting measures are able to make useful inferences relating to the effectiveness of a managerial intervention soon after the data necessary for such analyses become available. This could be the weeks or months that follow the said intervention and in which any effects resulting from the intervention could be observed. A typical comparison such as this could involve, for instance, an examination of a change in a company's revenues in the accounting quarter prior to and the accounting quarter after a new product is introduced. While such an approach would certainly be convenient, an obvious challenge inherent in this kind of analysis would be to disentangle effects that are attributable to the intervention under study from other factors that would invariably muddle the results. Even if one were somehow able to implement statistical procedures that control for many of the confounding effects involved when using accounting indicators of performance, other issues nonetheless remain. For instance, because the analysis can only be conducted once the necessary data for the time period after the intervention becomes

available, an important limitation of such studies would be that they tend mostly to be *ex-post* and therefore offer minimal insights into time horizons into the future. In contrast, finance-based measures like market value follow from efficiency principal under which asset prices adjust instantaneously to new information and at any given time are therefore reflect of all available information (Fama, 1970). Given that share prices are seen in the economics and finance literature as reflecting the discounted presented value of future cash flows, and that market value refers to the number of shares of a firm multiplied by the price of each share, the methodology allows for quantification of the impact of a shock without the need for an examination of months of post-event data.

An additional drawback using accounting measures to assess managerial decisions and other shocks – and one that is especially relevant to the tourism and hospitality industry, is the issue of seasonality. It is well documented in the literature that travel destinations experience seasonal demand patterns (Baum, 1999; Higham and Hinch, 2002; Jang, 2004; Duro, 2018). Any attempt to ascertain the success of a managerial decision like a recently deployed sales promotion must take into consideration the fact that demand for hotel rooms tends to follow certain patterns with fairly distinguishable peak, shoulder, and off-seasons. This, of course, is not easy to do when working with accounting metrics. This is because the analyst would, in most instances, find it challenging although not necessarily impossible to isolate the changes in these metrics resulting from the sales promotion under investigation from those attributable seasonal changes in demand. Because finance-based metrics are, on the other hand, forward looking and involve the use discounted infinite future time periods, the issue of seasonality is mitigated to a considerable extent (Nicolau and Sharma, 2019). As such the analytical framework provided by market valuation modelling techniques offers a lens into the overall effects including the *long-run* consequences of

a managerial intervention such as a new promotional undertaking by a firm. Moreover, the metrics necessary for the analysis despite offering a long-term prognosis, become available even quicker – soon after the shock or intervention has taken place.

Another issue that one might consider given the leeway managers tends to have with regards to accounting procedures, a common issue associated accounting measures is that they can be subject to manipulation managers (Benston, 1982). This of course, is certainly an issue that is relevant in the context of promotions, because managers may be tempted to inflate the perceived effectiveness of their promotional choices. Stock prices on the other hand are less susceptible to managerial control (McWilliams and Siegel, 1997).

The market value method approach employed here seeks to assess the impact of an event on a firm by examining the behavior of its stocks in the days surrounding the shock. Widely utilized in the marketing literature, market value based event studies have increasingly also been seen in the hospitality and tourism scholarship to study the impacts of a wide range of events including firm restructuring (Li et al., 2020), legislative events (Nicolau and Sharma, 2019), mergers and acquisitions (Li and Singal, 2021), corporate social responsibility related initiatives (Lee, Seo and Sharma, 2013) In this literature, atypical behavior – or abnormal returns - observed within the window are attributable to the shock itself, and therefore serve as an impact of the event.

To define event dates – in this paper the dates when promotions were rolled out, a search of the Factiva database was conducted for promotional activities by major publicly traded United States hotel firms. The search encompassed almost three decades of data, concluding right before the start of the COVID-19. Promotions deployed during the pandemic were deliberately excluded to avoid likely distortionary effects given the disproportionate impact of the pandemic on the hospitality industry. Only US wide corporate level promotions were considered. In other words,

property level and localized promotions were not considered because they would not be expected to have a notable impact on stock prices. The event dates were assumed to be the series of dates when the news about a new promotion became public.

In line with the McWilliams and Siegel (1997) recommendations, event windows were then defined. Multiple windows were used for the detection of abnormal returns, ranging from a three-day (-1,1) window encompassing each promotional roll out, to a ten-day (-5,5) window. The range of windows utilized would permit the examination of changing levels of abnormal returns as the time period around the promotional rollout expands or condenses, which in turn would allow for greater confidence that any effects detected are attributable to the promotion itself.

Despite the innate capacity of the method in comparison with accounting-based methods to inherently control for confounding factors, event contamination can still result from other pertinent shocks that might have occurred within in the days surrounding the event. An additional search of the Factiva database was therefore conducted for other relevant news items within the broadest (5,5) window that may also have the potential to generate abnormal returns. Events suspected of having been contaminated were excluded, after which the dataset was reduced to 320 promotional campaigns across the major hotel brands in the United States. For each of the 320 promotions, additional details comprising variables that could serve to better understand any differential effects resulting from the various promotions in the dataset. This included information regarding the hotel deploying the promotion, the type of promotion (price discount, volume discount, loyalty program related promotion, etc.), the party towards whom the promotion was intended (other businesses like travel agents, or consumers).

Normal returns were estimated on the basis of Sharpe's (1963, 1964) market model using a standard 150-day period of data:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where for hotel company i on day t , R_{it} refers to the daily returns. R_{mt} refers to the market index's returns. α_i refers to the returns of hotel i independent of the market, and β_i describes the sensitivity of returns of i to market fluctuations.

The error term ε_{it} follows the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model (Bollerslev, 1986) under which current variance is estimated based on historical variance and prior squared observations. The conditional variance is given by with $\varepsilon_{it} = h_{it}^{1/2} \eta_{it}$ and $\varepsilon_{it} / \varepsilon_{it-1}, \varepsilon_{it-2}, \dots \sim N(0, h_{it})$ being identically and independently distributed and $E(\eta_{it}) = 0$ and $E(\eta_{it}^2) = 1$. c_i , λ_i , and γ_i are parameters to be estimated.

Abnormal returns stemming from the promotional roll outs are derived as:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

Once the series of abnormal returns were obtained, they were then tested for statistical significance. For added robustness, three tests were used. Brown and Warner's (1985) test is one of the more standard tests that has been used in the event study literature over the years. In this test

$$t_i = \frac{\sum_{i=1}^N AR_i}{\sum_{t=1}^N AR_i \sigma_{\varepsilon_i}^2}$$

where N in the present study refers to the number of promotions, and AR_i as previously used, describes the abnormal returns obtained on the day a promotion was rolled out.

The Giaccotto and Sfiridis' (1996) test was also used. This test involves a jackknifing procedure and has the advantage of being able to better control for event induced variance. The procedure also reduces estimation bias, and is based on the calculation of standardized abnormal returns (SAR) for each company's stock j . For a window of L and N firms, the test is conducted as

$$t_{jackknife} = \frac{\overline{SAR}_t}{S_{jackknife} / \sqrt{N}}$$

in which

$$S_{jackknife} = \left[\frac{1}{N-1} \sum_{j=1}^N (SAR_{jt} - \overline{SAR}_t)^2 \right]^{1/2}$$

and

$$\overline{SAR}_t = \frac{1}{N} \sum_{j=1}^N SAR_{jt}$$

$$SAR_{jt} = \frac{AR_{jt}}{\hat{\sigma}_{AR_{jt}}}$$

$$\hat{\sigma}_{AR_{jt}} = \left[\sum_{t \in L} \frac{(AR_{jt} - \overline{AR}_j^2)}{L} \right]^{1/2}$$

Finally, a non-parametric test was used in order to check for significance of abnormal returns without the need to make assumptions regarding the distribution of the data. Specifically, the Corrado (1989) test was used for this purpose. Under this test:

$$t_2 = \frac{\frac{1}{N} \sum_{i=1}^N \left[K_{io} - \frac{1}{2}(T+1) \right]}{\sqrt{\frac{1}{T} \sum_{i=1}^T \left[\frac{1}{N} \sum_{i=1}^N \left[K_{it} - \frac{1}{2}(T+1) \right] \right]^2}}$$

where K_{it} represents the rank in the series of hotel i 's abnormal returns, and T refers to the days in the series.

3.3. Results

Table 3.1 summarizes the effects of promotions on daily abnormal returns. For the dataset as a whole, the results indicate that on the day after promotions are deployed, significant abnormal returns are observed (AR = -0.24%) for the hotel rolling out the promotion. The result is consistent across all three tests of significance used – the Brown and Warner (1985) test ($t = -2.019$, $p < 0.05$) and the nonparametric tests of Corrado (1989) test ($t = -2.107$, $p < 0.05$) and of Giaccotto and Sfiridis (1996) test ($t = -2.588$, $p < 0.01$). The findings suggest that soon after shareholders become aware of a newly rolled out hotel promotion, concerns about the effects on the long-term firm performance mount, and result in the erosion of the hotel's market value. Note that the absence of abnormal returns on subsequent days should not be interpreted as evidence that the devaluation resulting from the deployment of promotions is temporary and therefore undeserving of managerial attention. Reasoning such as this may certainly be appropriate if one were using accounting measures like daily occupancy rate in which case a single day decline in a hotel's occupancy following a new promotion would not be sufficient to warrant concerns about the said promotion's effectiveness. The metrics used in the present study are instead finance-based. Recall that the price of a stock at any given time reflects the discounted value of *all* future cash flows, and under the efficiency principle of finance, incorporates all available information (see Fama, 1970; McWilliams and Siegel, 1997; Sorescu, Warren, and Ertekin, 2017). Consequently, the drop in market value of 0.24% represents from a finance perspective an estimate of the overall effects resulting from a new promotional activity over infinite future time periods, and is indeed indicative of the detrimental effects of hotel promotions.

Table 3.1: The effect of promotions on daily abnormal returns

Day	Abnormal returns GARCH (1,1)	Brown- Warner	Corrado	Giacotto- Sfiridis
-5	-0.05%	-0.434	-0.354	-0.574
-4	0.10%	0.876	0.217	-0.093
-3	0.09%	0.784	0.925	0.512
-2	0.15%	1.276	0.943	1.154
-1	-0.05%	-0.463	-0.876	-1.240
0	-0.18%	-1.505	-1.496	-1.214
+1	-0.24%	-2.019b	-2.107b	-2.588a
+2	-0.09%	-0.741	-0.437	-0.519
+3	0.00%	-0.029	-0.500	-0.962
+4	-0.05%	-0.464	-0.805	-0.851
+5	0.01%	0.075	0.585	0.999

a=p<0.01, b=p<0.05, c=p<0.1

The findings resulting from the analysis of cumulative abnormal returns – or the examination of aggregate returns over specified windows surrounding the promotions – provides additional corroboration of the aforementioned results. These cumulative returns are summarized in Table 3.2. In the broadest window examined – the (-5,5) window comprising 5 days before and after a promotion, no significant abnormal returns are observed with any of the tests. However, as the windows examined become shorter there is a palpable trend towards increasingly negative and significant abnormal returns. In the (-4,4) window, the Giacotto-Sfiridis (1996) test detects moderately significant negative abnormal returns ($t=-1.700$, $p<0.10$), but no abnormal returns are detected by the Brown and Warner (1985) and Corrado (1989) tests. The analysis of the (-2,2) window, on the other hand, shows negative returns (-0.40%) the significance of which is confirmed under both the Corrado (1989) and the Giacotto-Sfiridis (1996) tests. In the smallest window (-1,1) consisting of the three-day period encompassing each promotion, substantial adverse abnormal returns (-0.47) are observed and found statistically significant by the Corrado (1989) ($t=-2.586$, $p<0.01$) and Giacotto-Sfiridis (1996) ($t=-2.751$, $p<0.01$) tests. These results based on

analysis of both daily as well as cumulative returns support hypothesis 1 that the deployment of sales promotions erodes market value of hospitality firms.

Table 3.2: The effect of promotions on cumulative return windows

Windows	Abnormal returns GARCH (1,1)	Brown- Warner	Corrado	Giaccotto- Sfiridis
(-5,5)	-0.31%	-0.797	-1.178	-1.397
(-4,4)	-0.27%	-0.762	-1.379	-1.700c
(-3,3)	-0.32%	-1.019	-1.341	-1.678c
(-2,2)	-0.40%	-1.544	-1.777c	-1.931c
(-1,1)	-0.47%	-1.544	-2.586a	-2.751a

a=p<0.01, b=p<0.05, c=p<0.1

In order to assess the differential impact of the various types of promotions, additional analysis was performed. The results of these regressions are provided in Table 3.3a and Table 3.3b. Seven categories of promotions were used for this analysis – (i) price promotions (PR), which involve simple price discounts, (ii) volume promotions (VO), which involve discounts based on number of units purchased, (iii) discounts targeted at loyalty program members (LO), (iv) coupons (CU), (v) contests (CN), (vi) gifts (GI), (vii) promotions provided in partnership with other firms (PA). While some promotions may sometimes fit solely into one of the aforementioned categories, others may be classified under two or more promotions. For instance, if a hotel offers a free gift – such as a bottle of wine to loyalty members booking a room on a particular weekend – the promotion would fall under both the loyalty program category as well as the gifts category.

Table 3.3a: The effect of type of promotion on price, volume, loyalty programs, coupon promotions

	Price (PR)		Volume (VO)		Loyalty (LO)		Coupon (CU)
PR Only	-0.005b (0.003)	VO Only	-0.005 (0.009)	LO Only	0.002 (0.003)	CU Only	0.005 (0.003)
PR.PA	-0.009 (0.009)	VO.GI	0.005 (0.006)	LO.GI	0.001 (0.003)	CU.VO	0.002 (0.008)
PR.LO	-0.003 (0.011)	VO.LO	0.007 (0.005)	LO.PR	-0.001 (0.011)	CU.PA	0.021a (0.001)
PR.GI	0.010 (0.007)	VO.PA	-0.003 (0.006)	LO.VO	0.007 (0.006)	CU.VO.GI	0.012a (0.002)
PR.VO	-0.002 (0.011)	VO.GI.LO	0.004 (0.004)	LO.GI.VO	0.005 (0.005)	CU.VO.PA	0.017a (0.002)
PR.PA.VO	-0.013a (0.005)	VO.CU	0.002 (0.008)	LO.PA.GI	0.017 (0.016)	CU.GI.PR	0.005a (0.002)
PR.CN	-0.019a (0.002)	VO.GI.PA	0.023a (0.006)	LO.CN	-0.009a (0.002)		
PR.GI.CU	0.003 (0.002)	VO.PR	0.000 (0.010)	LO.PA.CO	-0.001 (0.003)		
PR.PA.CN	-0.018a (0.003)	VO.PA.PR	-0.011b (0.005)	LO.PA.VO	-0.005 (0.004)		
PR.PA.GI	0.019a (0.002)	VO.PA.CU	0.017a (0.002)	LO.PA.GI.VO	-0.011a (0.003)		
PR.LO.GI	0.000 (0.002)	VO.PA.LO	-0.005 (0.005)	LO.PR.GI	0.001 (0.002)		
PR.LO.PA	-0.011b (0.004)	VO.PA.GI.LO	-0.012a (0.003)	LO.PR.PA	-0.008c (0.004)		
Y00toY06	-0.009c (0.005)	Y00toY06	-0.009c (0.005)	Y00toY06	-0.008 (0.005)	Y00toY06	-0.008c (0.005)
Y07toY15	-0.007 (0.005)	Y07toY15	-0.005 (0.005)	Y07toY15	-0.005 (0.005)	Y07toY15	-0.005 (0.004)
Y16 -	-0.007 (0.005)	Y16 -	-0.007 (0.005)	Y16 -	-0.007 (0.005)	Y16 -	-0.006 (0.004)
B2B	-0.015a (0.004)	B2B	-0.012a (0.004)	B2B	-0.012a (0.004)	B2B	-0.011a (0.004)
B2C	-0.019a (0.004)	B2C	-0.017a (0.004)	B2C	-0.017a (0.004)	B2C	-0.017a (0.004)
Assets	0.000c (0.000)	Assets	0.000c (0.000)	Assets	0.000 (0.000)	Assets	0.000c (0.000)
Assets ²	0.000c (0.000)	Assets ²	0.000c (0.000)	Assets ²	0.000 (0.000)	Assets ²	0.000c (0.000)
Constant	0.030a (0.008)	Constant	0.025a (0.007)	Constant	0.024 (0.007)	Constant	0.024 (0.007)
R ²	0.075	R ²	0.068	R ²	0.051	R ²	0.057

PR = Price Discount, VO: Volume Discount, LO: Loyalty member promotion, CU: Coupon, CN: Contest, GI: Gift, PA: Partnership
a=p<0.01, b=p<0.05, c=p<0.1

Table 3.3b: The effect of type of promotion on contest, gift, partnership promotions

	Contests (CN)		Gifts (GI)		Partnerships (PA)
CN Only	-0.013b (0.006)	GI Only	-0.003 (0.003)	PA Only	0.008 (0.008)
CN.PA	0.004 (0.007)	GI.VO	0.005 (0.006)	PA.PR	-0.007 (0.009)
CN.GI.PA	0.002 (0.002)	GI.LO	0.001 (0.003)	PA.VO	-0.002 (0.006)
CN.PR	-0.019a (0.002)	GI.PR	0.013c (0.007)	PA.CN	0.004 (0.008)
CN.PA.PR	-0.017a (0.003)	GI.LO.VO	0.003 (0.004)	PA.CU	0.021a (0.002)
CN.LO	-0.010a (0.002)	GI.PA	-0.001 (0.006)	PA.GO	-0.001 (0.006)
CN.PA.LO	-0.003 (0.002)	GI.PA.VO	0.006	PA.GI.VO	0.023a (0.006)
		GI.PA.LO	0.016 (0.016)	PA.PR.VO	-0.011b (0.005)
		GI.VO.CU	0.012a (0.002)	PA.LO.GI	0.016 (0.017)
		GI.PA.CN	0.004 (0.002)	PA.VO.CU	0.017a (0.002)
		GI.PR.CU	0.006a (0.002)	PA.GI.CN	0.003 (0.002)
		GI.PA.PR	0.022a (0.002)	PA.PR.CN	-0.017a (0.003)
		GI.PA.LO.VO	-0.012a (0.003)	PA.PR.GI	0.021a (0.002)
		GI.PR.LO	0.001 (0.002)	PA.LO.CO	-0.001 (0.003)
				PA.LO.VO	-0.005 (0.005)
				PA LO GI VO	-0.013a (0.003)
Y00toY06	-0.008 (0.005)	Y00toY06	-0.009c (0.005)	Y00toY06	-0.008c (0.005)
Y07toY15	-0.005 (0.005)	Y07toY15	-0.005 (0.005)	Y07toY15	-0.006 (0.005)
Y16 -	-0.006 (0.005)	Y16 -	-0.006 (0.005)	Y16 -	-0.006 (0.005)
B2B	-0.005 (0.006)	B2B	-0.012a (0.004)	B2B	-0.012a (0.004)
B2C	-0.010b (0.005)	B2C	-0.018a (0.004)	B2C	-0.017a (0.004)
Assets	0.000b (0.000)	Assets	0.000c (0.000)	Assets	0.000b (0.000)
Assets ²	0.000b (0.000)	Assets ²	0.000c (0.000)	Assets ²	0.000b (0.000)
Constant	0.018 (0.007)	Constant	0.025 (0.007)	Constant	0.026 (0.007)
R ²	0.049	R ²	0.078	R ²	0.094

PR = Price Discount, VO: Volume Discount, LO: Loyalty member promotion, CU: Coupon, CN: Contest, GI: Gift, PA: Partnership

a=p<0.01, b=p<0.05, c=p<0.1

For promotions that are classifiable in only a single category, only price promotions (0.005, $p < 0.05$) and contests (-0.013, $p < 0.05$) exhibit statistically significant effects, both of which are negative. Although other types of promotions classifiable in only a solitary category do not result in statistically significant effects in either direction, striking results emerge when one looks at the promotions that are listed under two or more categories. The negative effects of price promotions are, for example, frequently aggravated when combined with a number of other types of promotions including contests (-0.019, $p < 0.05$). Similarly, when price promotions that are rolled out in partnership with other organizations that also entail a volume discount component, also result in significant negative effects (-0.013, $p < 0.01$), thus significantly worsening the generally negative impact of pricing promotions. Similar effects are detected when pricing promotions rolled out as part of partnerships involve contests (-0.015, $p < 0.05$) or offers for loyalty program members (-0.011, $p < 0.05$). Interestingly when partnered pricing promotions also entail gifts, the general negative effects of price promotions are ameliorated (0.019, $p < 0.01$). Although this effect might seem coincidental, the finding is corroborated when looked at volume discounts specifically.

The impacts of volume discounts are also largely negative, but the adverse effects are countered to a certain extent when volume discounts involve gifts in partnership with other firms (0.023, $p < 0.01$). It is important to note that the previous two effects described might appear identical, but are inherently different. The first discusses the mitigating impact of the price, volume, partnered combination on price promotions in general, whereas the second discusses the mitigating impact of the same combination on volume promotions. Regarding loyalty program promotions, the most adverse effects are detected when the loyalty discount also involves a contest (-0.009, $p < 0.01$), or also involves a pricing discount and partnership (-0.008, $p < 0.1$) as part of the

same promotion. The impact of coupon promotions, on the other hand, is bolstered if the promotion entails other components such as a partnership with another organization.

Conspicuous among the results presented in Table 3.3b are the negative market value impacts of contests. Whether a contest is implemented – whether in isolation, or as part of a combination that also involves certain other attributes like a price discount (-0.019, $p < 0.01$) or a loyalty program promotion (-0.010, $p < 0.01$) a significantly negative impact on long term hotel performance is observed in the analysis. Note also that some of these categories may entail a clear tangible monetary component whereas other classifications presented above may not. The analysis indicates that promotions like price discounts, which have this tangible monetary component have a markedly greater negative impact on hotel market value than promotions like gifts, which do not have this tangible monetary association. The result supports hypothesis 2.

Finally, the analysis considered other attributes also. Across all types of promotions, business to business promotions (B2B) as well as business to consumer (B2C) promotions had significant effects that are higher than business to employees (B2E). Also, no unusual trends were detected over time. Promotions from the early 2000s had, for the most part, similar effects to more recent promotions. Interestingly, firm assets did seem to matter across most promotional categories, with larger firms experiencing fewer adverse impacts.

3.4. Concluding Discussion

This paper contributes the strand of the literature examining the link between promotional activity and business performance (see also Byun and Jang, 2015; Kim and Kang, 2018; Lucas, 2018; Zhu et al., 2019). However, much of the research on the topic has drawn conclusions based on data from retail and manufacturing settings. When discounting or other promotional

strategies have been studied in the hospitality and tourism setting, the focus has been on using accounting indicators of performance like occupancy rate (for example Kim, Roehl and Lee, 2019). While approaches using accounting metrics offer useful insight, they mostly provide an understanding of the short-run performance related consequences of sales promotions. Not surprisingly, there have been calls in recent years in the hospitality and tourism scholarship to also consider alternative measures of firm performance (see Assaf and Tsionas, 2019).

Moreover, to better understand the overall implications of promotional activity by hotels, the long run must also be considered. The present study is, to the authors' best knowledge, the first to use the finance-based market value approach to assess the long-term consequences of promotions in the hospitality industry. Using a rich dataset of over 300 US corporate level promotional campaigns by hotels spanning three decades, we show that hotel promotions have a negative impact on long term performance as they erode firm value. We additionally find that not all types of promotions have an equal impact. Those promotions that might be perceived as reasonable equivalent of money – i.e., those that have a tangible monetary association have more significant value destructive effects than those promotions that may not be seen as close proxies of money. This includes, for instance, price discounts, the deployment of which has discernible negative implications for long term hotel performance. On almost the other extreme are promotions that involve incentivizing bookings by offering gifts to consumers. These types of promotions do not involve a tangible monetary component, and do not have the adverse performance effects that are observed with promotions that are closer to actual money.

Important theoretical and managerial implications follow from the findings of this study. First, the results suggest that, in general, promotions ought to be deployed more judiciously. Indeed, it has been recognized in the literature that promotions are more effective if the gain created by them

in the short run offsets the losses that result from them in the longer time period (Greenleaf, 1995). Despite this, promotions are rolled out routinely in the hospitality industry. The indiscriminate roll out of promotions by hotels might well boost metrics like occupancy, but in the long run appears to erode firm performance. Second, the results obtained here underline the need for a redesign of managerial reward structures and compensation programs. Current performance appraisals and bonuses for managers in the hospitality industry emphasize indicators such as occupancy rate and revenue per available room. Such a system, however, appears to result in an agency problem with the potential of a divergence of interests between business owners and managers appointed by them. An improved compensation system might also consider expanding current levels of stock options for revenue managers and others involved in optimizing revenue strategy for hotels. Third, because the findings of this study indicate that *type* of promotion matters, a stronger preference on non-monetary promotions whenever possible might help hotels maintain firm value while also bolstering short-term metrics like occupancy rate.

In assessing the effect of promotions on the hospitality industry, this study has used a forward-looking market value method to quantify performance. Despite the many merits of this approach outlined throughout the paper, there are certain limitations in light of which the findings should be interpreted. First, the paper relies on data from publicly traded hospitality firms. While a substantial portion of hotels in the United States are publicly traded, there also a considerable number of small, private hotels in the US. As such, prudence is advised if extending the findings of this paper to private hotels. Second, the results of this paper hold only to the extent that the efficiency principle holds. Although the concept of efficient markets is central to much of the economics and finance literature, it has, nonetheless, been met with some criticism over the years (see Malkiel, 2003).

For future research, we recommend analysis based also on *other* long term performance measures. In this research, we have used market value as the metric of analysis. Indeed, there is a dearth in the literature of long-term performance measures of hospitality performance. Future research might also focus on developing such long-term measures.

Chapter 4: The Effect of Movie and Television Placements by Hospitality Firms

Abstract

Brand integration has become an increasingly common marketing strategy employed by companies today. By incorporating branded content into various media formats, companies use placements as an advertising device intended to promote their products and services. However, although much of the extant literature has used behavioral methods to assess the effectiveness of brand promotions, there is only a modest body of academic work that has sought to quantify the impact of these placements on the financial performance of companies. This is especially true with regards to the hospitality literature, despite the popularity of brands placements as a form of advertising across the industry. Using the event study methodology, this paper assesses the performance impacts resulting from hospitality product and television placements in film and television.

Keywords: brand integration, product placements, event study

4.1. Background

Brand integration, an advertising strategy which entails the deliberate insertion of branded products and services into audio and visual mass communication channels (Balasubramanian 1994), is a relatively common practice employed by marketers today. Although the term ‘brand integration’ encompasses the inclusion of branded content into media such as radio and television, it is the placement of brands in films in particular that has attracted much of the attention of researchers in the last few decades (see for example, Yang and Roskos-Ewoldsen, 2007; Wiles and Danielova, 2009; Naderer, 2018; Srivastava, 2020). This relatively recent academic interest in this sort of advertising in no way implies that brand integration itself is a recent practice. The 1916 movie, *She Wanted a Ford*, is sometimes cited as the earliest instance of the placement of a product into film (Thomas and Kohli, 2011). And by the early as the 1930s, MGM Studios had established a dedicated unit tasked with selling advertising space blended within its movies (Rothenberg, 1991). Of course, film placements have evolved radically ever since. Whereas initial placements were somewhat haphazard and might only have been in the form of fleeting background props, in recent decades branded placements in film frequently assume a much more seamless yet prominent role, even becoming an integral part of many movies (Yang and Roskos-Ewoldsen, 2007). The Mini Cooper, manufactured by BMW is, for example, conspicuously showcased throughout the 2003 movie *The Italian Job*, almost intertwined into the movie’s plot.

By 2019, revenues from product placements in US media had grown to \$11.63 billion (Cision PRWeb, 2020). But are movie placements effective as a managerial strategy? In other words, is branded integration in film worthwhile for brands that pursue this strategy as a form of advertising? For many kinds of products and services the prior literature indeed finds certain beneficial effects, especially when one approaches the question from a consumer behavior

perspective (see Nelson and Devanathan, 2006; Lehu and Bressoud, 2008). Even when considers the tourism and hospitality literature specifically, there is some evidence that suggests that destinations featured in movies may experience a number of desirable effects (see Riley and Van Doren, 1992; Tooke and Baker, 1996; Gong and Tung, 2017; Wen et al., 2018). But less is known about how brand placement in movies by hospitality and tourism corporations – rather than destinations – impact performance of the firms involved. Moreover, little is known about the issue from a finance-based perspective. Certainly, it may be true that positive effects for destinations featured in film also result in positive financial effects for hotels and other tourism related businesses at the destination. This, however, is a conversation unrelated to the objectives of this paper. Instead, the present study is concerned with ascertaining how product placements in film and television by hospitality brands impact corporate-wide indicators of financial performance. In order to do this, an event study methodology approach is employed, using data from United States securities markets. The approach is detailed in the methodology section.

The remainder of the paper is organized as follows. The next section reviews the literature examining the relationship between brand integration and performance. Some of the popular approaches used in this scholarship to assess the effectiveness of brand integration are outlined, and the methodological and theoretical gaps that support the development of this study are highlighted. Thereafter, we make a handful of predictions involving theoretical and practical expectations that follow from our key underlying arguments. After that, we present the methodology section, in which we provide a comprehensive description of the data collection process as well as the methodological steps used in the analysis. Next, the results of the analysis conducted are detailed. Finally, we conclude with a discussion section in which we identify the key implications that result from the study's findings.

4.2. Does Brand Integration Work?

Companies today place their products into a variety of media, including television, radio, video games, theater productions and novels (Russel and Belch, 2005). In many ways, brand integration blurs the line between advertising and entertainment (Balasubramanian, 1994), and in the process creates a potentially potent yet subtle advertising mechanism. Given that managerial decisions in the hospitality industry have repeatedly been found to impact firm performance (see for instance, Graf, 2009; Xie and Kwok, 2017; Dogru et al., 2020; Woo et al., 2019; Gim and Jang, 2020), one is inclined to wonder how advertising choices with regards to film and television show placements might also be pertinent to performance. The more general link between advertising and performance has, of course, been well established both in the general business literature (Mathur and Mathur, 1995; Eng and Kay, 2007; Sridhar et al., 2014), as well as in the hospitality specific literature (Chen et al., 2013; Assaf et al., 2015; Kim et al., 2019; Jiang et al., 2020). Yet, despite the decades old practice that is brand integration, it has only been relatively recently that a sustained interest in studying this form of advertising has emerged.

In general, behavioral approaches stand out as dominant in the literature examining the effectiveness of brand placements. Papers in this strand of the literature usually employ measurement and interpretation to understand how consumers respond to placements. Yang and Roskos-Ewoldsen's (2007) experimental investigation, for instance, examines the effect of brand placements on consumer choice behavior. Several studies in this methodological strand of the literature commonly seek to uncover constructs such as purchase intentions attributable to and resulting from placements (see for instance, Law and Braun, 2000; Morton and Friedman, 2002). Other behavioral studies (Homer, 2009) have sought to explain the role specific placement related

attributes, such as repetition and prominence play in determining the success of branded content in film and television.

Certainly, behavioral studies like those described above lay critical groundwork for understanding the psychological processes and conditions at play in communicating the underlying message to consumers. As such they would undoubtedly be useful for purposes of placement design. The most glaring limitation of using behavioral approaches to study the effectiveness of placements, however, is that they fail to satisfactorily answer the question of whether placements are ultimately able to contribute to the bottom line of companies. One might presume, of course, that an increase in a variable like purchase intention as elicited from a consumer survey or experiment would translate into an actual increase in sales for a company. But in order to answer the question more conclusively, however, consideration must be given to accounting or finance-based measures.

Yet, almost absent from the literature assessing the value of brand integration to firms are approaches that use accounting-based metrics. It is largely the reports that emerge from the industry or news media (see Reed, 1989) that have sought to evaluate the success of a placement in terms of figures like sales volumes. At first glance, it may seem puzzling that there exist very few academic studies that employ measures such as changes in sales, revenues, profits, etc. to evaluate whether the placement of branded content in movies or television shows pays-off for the brand in question. It might seem reasonably simple, after all, to make comparisons using these measures before and after a movie is released, and attribute any changes in numbers to the success or failure of the placement under study. A closer scrutiny of some of the deficiencies that plague accounting-based approaches, however, seems to explain why they are largely absent from the literature evaluating placement effectiveness. For instance, because accounting indicators are

backward looking, one must wait for sufficient data to become available over relatively long time periods before they become usable in analyses. This introduces the possibility of confounding from the many other developments that would also affect firm performance in that time. Moreover, accounting based approaches tend to be susceptible to manipulation by managers (McWilliams and Seigel, 1997). This can indeed be relevant when evaluating the success of a product placement – a manager who has made important decisions regarding certain branded content may be tempted to inflate the effectiveness of his or her choices. Another issue that one must consider when using accounting-based measures to assess the impact of a film or television placement – especially a hospitality industry placement – is that of seasonality (see also Nicolau and Sharma, 2019). Can an airline, for example, be certain that it was the product placement in a movie released in the week before Christmas that was responsible for the Christmas week surge in demand for seats on its planes? The answer would clearly be no.

It is for these reasons that we find finance-based, rather than accounting-based measures to be more useful when quantifying the impact of placements on firm performance. Not only do they overcome some of the aforementioned limitations posed by behavioral and accounting methods when assessing the value of placements, but they offer additional advantages. Financial indicators like market value are forward looking, and given their capacity to adjust instantaneously to new information, they are readily available and more effective in isolating effects (see MackKay, 1997; McWilliams and Seigel, 1997; Sorescu et al., 2017). The paper closest in spirit to the present research – and in many ways the inspiration behind this study - is Wiles and Danielova's (2009) investigation into the worth of product placements. Our paper differs, however, from their study in critical aspects. Importantly, Wiles and Danielova (2009) do not look specifically at film placements from the hospitality industry. Instead, they adopt a much broader approach and

examine placements from all industries in only 31 movies from the year 2002 which made \$20 during the opening weekend in the US sales. Our sample, on the other includes only placements from the hospitality industry, and spans over four decades of movie and film placements, dating back to 1976.

4.3. Predictions

Meaning transfer models are frequently used in the literature to establish the link between placements and brand success. This transfer process is akin to the mechanism used to explain why celebrity endorsers can be effective. McCracken (1989) argues that celebrities are endowed with certain critical meanings, which in effective celebrity endorsements, are passed on from the celebrity to the product, and further on to the consumer. A similar process could be expected to occur in the case of hospitality industry placements in movies or television. A movie or television show – or indeed actors that are part of the said media - may possess certain characteristics that are desired by hospitality marketers to be associated with their product. These movies and television shows may thus be seen as an appropriate outlet for the placement of that product because of the associations that would be evoked.

The propositions of the Associative Network Memory model (Collins and Loftus, 1975) further support this mechanism of meaning transfer between the placement platform (television, film, etc.) and the placement brand. Under this model, human memory consists of a system of cognitive networks consisting of interlinked nodes. Links exist between a node for the brand, and nodes for the product, the category of the product and for the need that the product satisfies (Neale and Corkindale, 2021). Exposure to brands in appropriate settings influences memory relating to these brands and reinforces the necessary links (Thomas and Kohli, 2011). This in turn drives consumer

purchase behavior, and leads to an increase in market value of the brand, as reflected in its stock prices.

However, there are a number of factors that could be expected to influence the extent to which a placement of a hotel brand in a movie might result in desirable effects. Among them are those factors relate to the characteristics of the movie or television show (genre, parental rating, etc.). In fact, although we largely expect placements to be effective, it is possible that certain types of placements could be counter-effective, possibly even hurting the performance of the hospitality brand.

Genre entails a variety of classifications – action, drama, thriller, romance, science fiction, etc. Not all these classifications would be expected to have a similar effect. Similarly, parental advisory rating can assume a number of classifications, depending on suitability for certain audiences. Whereas some movies or television shows are considered appropriate for young children, others are not. We expect a disproportionate effect of parental advisory rating on hospitality industry placement effectiveness, as reflected in the resulting performance of the brand. We, therefore, make the following predictions:

Prediction 1: Brand integration in movies and television shows exerts a positive impact on performance of hospitality firms

Prediction 2: The effectiveness of a hospitality brand placement varies with the movie or television show's characteristics

4.4. Data and Methodology

In order to assess the impact of movie placements on corporate level firm performance, an event study methodology, following the recommendations of McWilliams and Siegal (1997) is employed. The methodology follows from the tenets of one of the seminal propositions of

neoclassical economics - the efficient market hypothesis, under which the price of an asset at any given time is seen as a reflection of its value given all available information (Fama et al., 1969, Fama, 1979). Accordingly, any change in a price of an asset – such as a company’s stock returns – following an event is assumed to quantify the impact of the event. Central to the approach is the disentangling of ‘abnormal’ returns attributable to an event and impactful on firm performance from ‘normal returns’ that result from routine business operations. The method involves a sequence of steps based upon the McWilliams and Siegal (1997) guidelines which in the context of the present study are as follows:

- i) *Selection of sample:* Typically, in an econometric events study such as this, the first task is to select the sample. Accordingly, the first task here would be to obtain a list of US movies as well as US television shows which have featured placements from the hospitality industry. A relatively broad definition of hospitality is assumed, covering publicly traded hotel, airline, and restaurant companies. Although other types of businesses such as cruise operators and travel agencies also fall under the hospitality umbrella, for the sake of convenience, only placements from firms within the three aforementioned subsectors of hospitality are considered.

Because it would not be practical for us to personally watch thousands of movies and television shows for the purpose of identifying those that entail branded hospitality industry content, we compile a list from publicly available sources including IMDb.com (Internet movie database) and www.productplacementblog.com. A total of 189 placements were identified in this step from publicly traded US hotels, airlines, and restaurants .

- ii) *Determination of event dates:* The next step when using the methodology being described here is to determine the dates on which the events under study occurred. Given that instantaneous adjustment of asset prices is an underlying principle behind the event study method, the most appropriate event date corresponding to a particular movie would be the date of its public release. Similarly, for television shows, the date would be defined by when the particular episode featuring the placement was first broadcast. Other studies that use movies as part of similar financial event analysis, have also used the day of public release as the event date (see for example, Wiles and Danielova, 2009).
- iii) *Construction of event window:* In line with the specific steps outlined by McWilliams and Siegal (1997), it is standard practice in this methodological stand of literature to construct a window consisting of a small number of days encompassing the event date. The few days before an event permit for the detection of events from the early availability of information to some individuals. In the context of movies availability of information may result, for instance, from early screenings of a movie, i.e., screenings in the days prior to the public release. It is similarly also routine in the event analysis literature to extend the event window to include a few days after the event date. This permits sufficient time for the dissemination of information across the spectrum of investors. A range of windows are used for the detection of abnormal returns resulting from hotel brand placements in film and television. This includes standard windows ranging from $[-5,+5]$ to $[-10,+10]$ window. The $[-10,+10]$ window would, for instance, cover the 21-day period encompassing the release day of each movie or television placement – the day of the

release, the 10 days leading up to the release, and the 10 days following the release. To illustrate, consider the movie, *Think Like a Man*, which premiered on 20th April 2012, and prominently featured the JW Marriott. The event window for this placement within which we would detect possible abnormal returns would be the twenty-one-day period ranging from 10th April 2012 to 30th April 2012.

- iv) *Identification of source of contamination:* It is important to remember that there are a wide range of possible shocks unrelated to brand integration that also affect firm performance. In order to more confidently attribute any abnormal returns that might result from the events under study from other confounding shocks, McWilliams and Siegal (1997) recommend the exclusion of events where confounding is likely. Accordingly, a search of the Factiva database will be conducted to look for possible sources of contamination within each event window. For instance, in the example from the *Think Like a Man* placement described above, the Factiva database was queried to check whether any incidents unrelated to the movie itself might have impacted Marriott performance in the period 18th April 2012 to 22nd April 2012. A total of 25 events were classified as likely contaminated and therefore dropped at this stage from further analysis.

- v) *Estimation of model:* The next step in the event study methodology is to estimate the model used to establish normal returns. This is usually done over an estimation period – or estimation window – consisting of an extended period leading up to the event itself. Consistent with the recommendations of Cowan (2003), and in line with other studies in this strand of the literature (for instance, Wiles and Danielova, 2009), a 255-day period of

securities data was used for model estimation purposes, whenever such data were available for a hospitality firm placing their product into a movie or television show. In order to mitigate the possibility of unreliable estimations, it was required that there be a minimum 90 days of data for the particular event to be considered for estimation. Four events had to be dropped as a result owing to non-availability of sufficient data. This might happen, for instance, if a particular hotel under examination for a placement became publicly traded mere weeks before the release of the movie in question. The final sample included 161 movies and television shows.

There are a number of estimation models available to researchers, but Sharpe's (1963; 1964) market model is the standard in the event study literature. In this model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

for firm i on day t , daily returns are defined by R_i whereas the variable R_{mt} denotes the market portfolio's returns, which in the present study was represented by Center for Research in Security Prices' (CRSP) equally weighted index. ε_{it} is the standard error term. Once normal returns have been estimated, abnormal returns, AR, resulting from the movie placements can be calculated as:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

In order to control for possible kurtosis and heteroskedasticity in ε_{it} , we estimate the autoregressive conditional heteroskedasticity model, Nelson's (1991) EGARCH. The

purpose of this would be to model the conditional variance of returns. The symmetric model would assume that any effect of new information on the variance would occur independent of the sign. If we define p as the number of lags, returns determined by the regular ARCH(p) model could be obtained as:

$$\varepsilon_{it} = h_{it}^{1/2} \eta_{it}$$

and $\varepsilon_{it} / \varepsilon_{it-1}, \varepsilon_{it-2}, \dots \sim N(0, h_{it})$, and η_{it} is independently and identically distributed with $E(\eta_{it}) = 0$ and $E(\eta_{it}^2) = 1$. Here h_{it} is the conditional variance and is represented as

$$h_{it} = c_i + \sum_{j=1}^p \lambda_{ij} \varepsilon_{it-j}^2$$

where c_i and λ_{ij} are parameters to be estimated. GARCH(p, q) results from a generalization of the above, with q representing the lags of the autoregressive portion. Accordingly, the conditional variance assumes the following form:

$$h_{it} = c_i + \sum_{j=1}^p \lambda_{ij} \varepsilon_{it-j}^2 + \sum_{k=1}^q \gamma_{ik} h_{it-k}$$

Considering that asymmetries can result from the unequal impacts on conditional volatility of positive and negative shocks of equal magnitude, an adaption of the GARCH model to Nelson's (1991) EGARCH is utilized (see Chang and McAleer, 2017), under which the conditional variance is expressed as:

$$h_{it} = c_i + \sum_{j=1}^p \lambda_{ij} \varepsilon_{it-j}^2 + \phi_i \varepsilon_{it-1}^2 D_{it-1} + \sum_{k=1}^q \gamma_{ik} h_{it-k}$$

where $D_{it-1} = 1$ if , else $D_{it-1} = 0$.

- vi) *Testing of abnormal returns:* Once abnormal returns are detected, they must also be tested for statistical significance. Brown and Warner's (1985) test is used for this purpose. The test statistic is computed as:

$$t_i = \frac{\sum_{i=1}^N AR_i}{\sum_{t=1}^N AR_i \sigma_{\varepsilon_i}^2}$$

In order test significance of cumulative windows, a bootstrapping procedure is applied with a resampling ratio is 0.25 is performed based on the work of Lyon, Barber and Tsai (1999) and Kramer (2001).

4.5. Results

The results of the analysis of daily returns over the 21-day period ranging from 10 days before a movie's release to 10 days after is summarized in Table 4.1. Recall that under previously introduced efficiency principle that guides much of finance research, the price of a stock incorporates all available information, and reflects present value of discounted future cash flows (Fama 1969, 1970). Consequently, when using finance-based metrics like the ones utilized under event study approaches as done in the present paper, an examination of extended periods of time following a shock would counter-effective. This is because doing so would likely introduce considerable event contamination and thus result in unreliable estimates. Instead, it is the analysis of the (-10,10) window and patterns within it that would permit a more robust disentangling of any effects attributable to a particular event.

Table 4.1: The effect of placements on daily returns

Day	AR	Brown-Warner
-10	-0.04%	-0.219
-9	0.46%	2.385b
-8	0.22%	1.136
-7	-0.01%	-0.027
-6	-0.07%	-0.39
-5	-0.06%	-0.306
-4	0.20%	1.043
-3	0.46%	2.385b
-2	0.02%	0.11
-1	-0.25%	-1.316
0	-0.25%	-1.309
1	-0.03%	-0.134
2	0.17%	0.897
3	-0.10%	-0.518
4	0.14%	0.742
5	-0.18%	-0.936
6	0.20%	1.05
7	0.36%	1.876c
8	-0.09%	-0.454
9	0.08%	0.435
10	-0.03%	-0.134

a=p<0.01, b=p<0.05, c=p<0.1

AR= Abnormal Returns (Daily)

With regards to the individual days of this window, the results in Table 1 show that three of these days show significant positive abnormal results – day-9 (0.46%, $p < 0.05$), day-3 (0.46%, $p < 0.05$) and day+7 (0.36%, $p < 0.1$). The aforementioned efficiency principle also implies that the absence of additional days of positive abnormal returns should not be viewed as evidence of failure of using brand integration as a marketing strategy. The specific days of abnormal returns simply show the temporal patterns that the information dissemination process may have followed

across the investor spectrum. Importantly, no days of significant negative abnormal returns are detected. Concerns about days of non-significant returns may, of course, be valid when using accounting metrics. Here, the statistically significant positive results support the assertion that placements in movies and television by hospitality firms are effective – each day represent a change in overall valuation of the company. The positive reactions on Day-3, i.e., three days before the first official public screening of the movie or television show should not be surprising. A similar pattern has been observed in past studies in this strand of the literature – Wiles and Danielova (2009), for example, also find in their event study investor reactions to movies seem to occur seem to occur on Day -3. The early effects are explained by multiple factors. Not only have film prints been sent to movie theatres a few days prior to official release dates (Thomas, 1998), but movies are played for film critics and special audiences prior to date of release and that the possibility of leakages must be considered (see Wiles and Danielova, 2009). Similar reasoning might explain the positive reactions on Day -9. Publicity about an upcoming release begins to intensify around this time. This might come in the form of trailers, posters, and other mediums. Moreover, this would be the time when the brands behind the placements would be releasing information about the placement of their product in an upcoming movie. The information release may come through press releases or other advertising mechanisms. There is indeed evidence that this kind of ‘tie-in’ advertising helps placement brands (Karniouchina et al., 2016).

The effects observed in the analysis daily returns are corroborated by the analysis of entire windows of various lengths (see Table 4.2). The smaller windows show no significant effects in either direction, but positive effects of film and television placements are detected across the (-7,7)(0.61%, $p < 0.1$), (-8,8) (0.74%, $p < 0.1$), (-9,9) (1.28%, $p < 0.05$) and (-10,10) (1.21%, $p < 0.01$) windows. Interestingly, note that the statistical significance of effects becomes stronger as

the windows expand. This pattern should not, of course, be interpreted as an obvious statistical consequence resulting from the expansion of the windows itself, but rather to possible trends in how hotel investors process information regarding movie and film placements. The results obtained from the analysis of daily as well as cumulative returns are in line with Prediction 1, which anticipated that movie placements have a positive effect on the performance of hospitality firms.

Table 4.2: The effect of placements on cumulative windows

Window	CAR	Brown Warner p-value
(-10,+10)	1.21%	0.003
(-9,+9)	1.28%	0.007
(-8,+8)	0.74%	0.03
(-7,+7)	0.61%	0.064
(-6,+6)	0.25%	0.269
(-5,+5)	0.13%	0.374

CAR = Cumulative Abnormal Returns

In order to understand how medium specific and firm specific attributes mediate the effectiveness of placements, regression analysis was performed (see Table 4.3). The variables collected pertained to whether the placement was in a movie, television show or television movie, the hospitality specific subsector in which the brand that appeared in the placement belongs (airline, hotel, restaurant), the parental advisory rating, and the genre of the movie or television show (action, mystery, science fiction, etc.) Additionally, data on a firm level variable, assets, were analyzed in order to ascertain whether firm size plays any role in determining the effectiveness of placements.

The analysis suggested that the impact of movies and television shows were not significantly different than that of the baseline, television movies. In other words, placements across the three mediums – television shows, television movies and theater release movies were

found to be equally effective. Similarly, there was no evidence that placements from a particular hospitality subindustry were more or less impactful. Specifically, the analysis shows that brand placements by hotels and airline were as valuable as the baseline – restaurants.

Interestingly, however, we observed that movie related variables produced the most contrasting results. Both parental rating and movie or television show genre appear to matter. Whereas we find that placements in mediums rated G (suitable for general audiences) are significantly less effective than placements in outlets rated PG (parental guidance suggested). Moreover, we find that placements in mediums rated PG13 (some material may be unsuitable for children under 13) and R/TV-MA (restricted – under 17 requires accompanying guardian) resulted in significantly better performance effects for the brand. The general tends to appear to indicate that placements become more effective as the recommended age level advised for a movie or television show increases. The genre of the movie was also found in many cases to be pertinent. We find placements under the biographies have a negative effect compared with the aggregated baseline formed by action, animation, adventure, comedy crime, drama, fantasy, family, history, horror, realtyTV, romance, sports and thriller, whereas gameshows, musicals, mystery and sci-fiction genres are found to be particularly effective.

Lastly, the analysis suggests that firm size is irrelevant when it comes to placements. This is good news for smaller hospitality businesses – placements from them are as effective as placements from the major corporations that possess large assets. This result, along with the finding that hospitality sector type (airline, hotel, restaurant) does not matter when it comes to placements suggests that placement effectiveness has less to do with firm attributes, and more to do with the variables relating to the outlet in which they are placed.

Table 4.3: Effect of Movie and Brand Attributes on Placement Success

Variable	Coefficient
Theater Releases (Movies)	1.033 (1.982)
TV Shows	2.266 (2.313)
G (Parental Advisory)	-1.907 (5.312)
R_OR_TVMA (Parental Advisory)	2.797b (1.376)
PG13 (Parental Advisory)	3.402b (1.339)
Hotels (Sector Type)	-0.325 (1.255)
Airlines (Sector Type)	-2.277 (1.421)
Biography (Genre)	-3.519b (1.755)
Gameshow(Genre)	3.677b (1.693)
Music (Genre)	5.933c (3.478)
Mystery (Genre)	3.706c (2.016)
Science Fiction (Genre)	2.573c (1.466)
Assets (Firm Size)	0.000 (0.000)
Constant	-2.529 (2.130)
R ²	0.135

a=p<0.01, b=p<0.05, c=p<0.1

4.6. Conclusion

The findings of this study suggest that brand integration can serve as a useful component of advertising strategy in the hospitality industry. Exploiting a rich dataset that spans more than four decades of brand placements in film and television, we show that brand integration has the potential to contribute to firm performance among hospitality companies. The present study uses a market valuation approach, which in recent years has become increasingly popular in the hospitality literature (for instance, Gim and Jang, 2020; Li and Singal, 2021; Sharma and Nicolau, 2020; Qiu et al., 2021).

While previous literature has established from a behavioral perspective that product placements can be effective, the issue of how film and television placements impact financial performance of hospitality firms had remained largely unexplored until now. Our analysis shows that branded content may boost valuation of hospitality companies by up to a substantial 0.46% - a figure representative of the discounted value of all future cash flows attributable to the average hospitality industry placement. The effectiveness of placements is in many ways parallel to McCracken (1989) meaning-transfer process model which explains the mechanism that makes celebrity endorsements successful.

There are important implications that result from this paper. First, placements can significantly boost firm value of hospitality brands, and should be considered seriously by managers as an important marketing practice. Second, the fact that not all types of placements are equally effective has implications for how placements may be prioritized. As far as the hospitality industry is concerned, the genre of movies and television matters in determining the worth of placements. Moreover, the parental advisory rating also matter. These factors must be considered by hospitality industry when deciding the most appropriate outlets for their products to be placed.

Despite the many implications that follow from this research, there are certain limitations that must be kept in mind when interpreting the results. First, this study, like most other papers in the methodological strand of the literature that employs event studies, takes the efficiency principle as postulated by the neoclassical school, for granted. If it is established that markets are not efficient, many of the conclusions made in this paper would not be weakened. Although in recent years several schools of thought have emerged to challenge the principle of market efficiency, the neoclassical position nonetheless remains dominant. Second, this research considers only publicly traded hospitality companies. Yet, in the domain of hospitality and tourism, there exist hundreds of private organizations which are not traded on stock markets. While we are confident that the paper's findings would also apply to these companies, such parallels must be drawn with caution. A second weakness of this research is that it does delve into the many facets that would define a placement and make it different from other placements.

Indeed, for future research, we recommend that attention also be paid to aspects relating to the placement itself. In the present paper we have considered a number of variables pertaining to movie and television shows in which the brand was placed. This includes variables like the movie's genre, parental rating, etc. We have also studied the effect of brand level variables like company size. It would, however, help to further advance the literature if in future research, variables relating to the placement were also considered. This could include, for instance, how often a placement was repeated in a movie, or how prominently a particular product was displayed. While these variables have been studied from a behavioral perspective in the context of promotions, more work is needed from a finance perspective, that too in the context of the hospitality industry. Moreover, more research is needed to understand brand integration in the context of streaming and

OTT (over-the-top) platforms like Netflix and Hulu, as these platforms are becoming increasingly dominant.

Chapter 5: Contributions, Limitations and Future Research

This dissertation has made several theoretical, managerial, and practical contributions, the most important of which are summarized over the following pages. Importantly, the dissertation has attempted to provide a detailed and rigorous understanding of contemporary corporate communications that occur between firms in the hospitality and tourism industry and their customers. The communication forms that have been examined include online reviews, marketing promotions as well brand placements in film and television. The dissertation recognizes that corporate communication today entails a host of different platforms and channels. Moreover, the research that has been carried out in this dissertation appreciates that modern interactions between firms and consumers are ‘two-way’ in that certain types of information flow from firms to consumers, while other types of information are transmitted in the other direction. Today there exist a plethora of advertising, sales, and marketing techniques that are utilized by organizations to communicate their offerings to consumers.

Online reviews represent a mechanism for consumers to communicate their experience to firms as well as to one another. Despite the seemingly ready acceptance in the literature of the importance of online reviews (see Ye et al., 2009; Xiang and Gretzel, 2010; Cui et al., 2012) and the subsequent burgeoning number of papers on the topic, critical gaps remain. Specifically, while some previous studies have looked at the effects of reviews on certain outcomes (such as purchase intention or sales ranks), prior to the research conducted as Chapter 2 of this dissertation (published as Sharma et al., 2019), none that we know of have investigated Kahneman and Tversky’s (1980) prospect theory in the context of sentiment measures obtained from online reviews. The study has helped provide an answer to a previously unanswered question in this regard – to what extent is the sentiment expressed by consumers in online reviews afflicted by the seminal prospect theory

principles of loss aversion and diminishing sensitivity? The findings of this research indeed confirm the presence of both of the aforementioned principles in review sentiment. The detection of loss aversion suggests that the negative impact on sentiment of an unsatisfactory service experience is greater than the positive effect resulting from increase in ratings of the same amount. For example, a reduction in the overall ratings from an average value of, say, 4 to an actual value of 3 can be perceived as a reduction in the quality of service which has an effect on review sentiment. If managers try to resolve this situation and decide to implement strategies to increase the ratings back to 4, the increase from 3 to 4 will not bring about the same size of variation (with a different sign) in sentiment as the aforementioned reduction. The increase in ratings from 3 to 4 will cause a lower positive effect on sentiment than the negative effect derived from the variation from 4 to 3. Consequently, in practical terms, the “efforts” to get the rating back to the previous upper levels necessarily have to be greater than the “inattention” that caused the reduction in the rating. This clearly has additional implications for customer satisfaction and service recovery. For instance, while exceeding expectations might indeed result in satisfied customers, providers must strive to maintain that new, higher level of service. A return – even if temporary - to previous levels of service is likely to result in a level of customer satisfaction even lower than it was before at that level of service.

This dissertation has also helped better understand the implications of two other types of corporate communications that encapsulate communication in the other direction – i.e., communications from organizations to consumers. Specifically, the research has shed light on the performance effects that results from two different types of marketing activity – (i) promotional activities, and (ii) brand integration in film and television. From a managerial perspective, an

understanding of these two types of communication is helpful for purposes of planning and designing promotions and product placements.

The results from the hospitality promotions study are particularly interesting. Much of the previous literature has focused on short-term impacts of promotions in the hospitality industry (see Choi and Mattila, 2014; Kim and Kang, 2018; Zhu et al., 2019). And while investigations of short-term effects of promotions frequently find positive effects, albeit mediated by other factors, the long-run impacts of hotel promotions are much less understood. Study 3 explores this issue of long-term performance effects resulting from promotions using finance metrics, and detects significant negative effects. Specifically, the results suggest that hotel promotions tend to degrade firm value. The frequent use of promotions by hotel managers might, however, be explained by compensation structures in the hotel industry. Because rewards are based on accounting measures like occupancy, there is little incentive for managers to protect longer run indicators like firm value. Redesigning compensation systems with an increased focus on schemes such as stock options may alleviate the principle-agent issue that appears to be at play.

Chapter 4 studied the effects of hospitality brand placements in film and television. Past studies have evaluated placement effectiveness in terms of consumer aspects – recognition (Van Der Waldt et al., 2008), attitudes (De Gregorio and Sung, 2009; Balasubramanian et al., 2014), awareness (Kumar, 2017) and other similar constructs. Relatively less is known about the financial consequences for brands involved in placements, especially when the placements are from the hospitality industry. Using a dataset of over 150 film and television placements by hospitality firms, the findings of chapter 4 indicate that this form of advertising can be highly effective for hotels, airlines and restaurant companies.

Although this dissertation has helped to advance the literature on hospitality and tourism communication, the results obtained must be heeded while keeping in mind some limitations. Regarding the paper that measured loss aversion and diminishing sensitivity, if customers look at reviews, the publicly available average ratings are most likely to determine the customer's reference points. Note, however, that if reviewers remember the values with which they rated the service in the last consumption occasion, these values, rather than the ratings of others, could form these reviewers' reference points. The research conducted on online reviews in this dissertation relies on external reference points (i.e., published average values of ratings), while implicitly ignoring the potential role of internal reference points. One must acknowledge, however, that internal reference points are likely to have at least some effects. This can only be ascertained with further analysis once the necessary data have been obtained. As such, it could be interesting to see, as future research, whether internal memory-based reference points (for example, last value with which the reviewer rated the service) offer similar results. Interestingly, internal reference points have been looked at in other contexts (see for example, Bell and Bucklin, 1999; Thomas and Menon, 2007) but their role in review sentiment is not clearly understood, and would certainly be worthy of investigation.

Also, an additional future avenue for research would be to look at the effect of ratings of specific items on review sentiment. In the research that has been conducted in this dissertation, the overall rating was looked at. It would, in addition, be worthwhile to see whether the ratings of individual items exert a disproportionate effect, and which ones are more determinant. Finally, even though the dataset that has been used for the research is large, online review data have been obtained from a single platform (Tripadvisor) and for a single segment (airlines). Cross-validation

of the results obtained with different platforms and different industries would help reinforce the results obtained.

The papers that constitute chapter 3 (the effect of hotel promotions) and chapter 4 (the effect of hotel movie placements) of this dissertation have a number of limitations which one must keep in mind. Notably, there are some methodological limitations that common in both these papers that are important to consider. One, the papers rely on data from securities markets. Because a relatively small portion of all hospitality and tourism firms are actually publicly traded, the generalizability of any results that will be obtained remains uncertain. Two, in any event study – including the ones that have been conducted here – it is assumed that the event dates can be determined with certainty; however, in practice this is not the case (MacKinay, 1997). In both the promotions paper as well as the product placement paper, potentially simplifying assumptions about the event date has been made. Yet, whether the assumptions are tenable, is potentially debatable. Certainly, an argument can be made for instance, that information regarding a product placement in a movie might leak well before the release day, or even before the event window. As such, in order to paint a more complete picture it may be worthwhile to interpret the results that have been obtained in the hotel movie placements paper in conjunction with papers that use behavioral rather than finance-based perspectives (for instance, Nelson and Devanathan, 2006; Lehu and Bressoud, 2008). Although the paper acknowledges several behavioral papers, and indeed turns to the behavioral approaches when explaining the mechanism that makes promotions effective, further research is nonetheless necessary.

Similarly, in the promotions paper, simplifying assumptions about the event date were made. Specifically, the event date used in the research was the date when the first announcement regarding a particular promotion as found on the Factiva database. It is, however, admittedly

possible that information regarding upcoming promotions may have become available to some investors prior to dates established by the Factiva search. This might occur, for instance, as a result of an internal company newsletter, a news leak etc. Although the use of an event window rather than a specific event date mitigates this issue somewhat, a certain degree of caution must nonetheless be exercised when interpreting results. Furthermore, it may be useful for future research to overcome some of the issues presented here by using accounting-based methods, as this would complement the finance-based measures used in this dissertation.

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